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A Longitudinal Study of English Narrative Discourse Development in Young Spanish-English Bilinguals

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A LONGITUDINAL STUDY OF ENGLISH NARRATIVE DISCOURSE

DEVELOPMENT IN YOUNG SPANISH-ENGLISH BILINGUALS

by

Abbie Olszewski

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ABSTRACT

A Longitudinal Study of English Narrative Discourse Development in Young Spanish-English Bilinguals

by

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The Common Core State Standards were designed for all students to build a foundation for educational and career success through reading increasingly challenging texts. To meet these standards, all children need to acquire oral language skills in narration, which are foundational to reading.

Skill in oral narrative comprehension and production is the best predictor of later literacy functioning, especially for students who may be at-risk for academic and language problems. Similar to English monolingual children, narrative ability has been shown to underlie literacy development for bilingual children. Although there are numerous studies examining English *narrative* structure for Spanish-English bilingual (SEB) students, the literature is limited in examining *episodic* structure over time for SEB students in longitudinal and cross-sectional studies.

The purpose of this three-year longitudinal study was to examine the narrative macrostructure (initiating event, action, obstacle, consequence) skills of one hundred

eighty-nine Spanish-English Bilinguals (SEBs) English fictional narrative retellings to determine the patterns of their fictional narrative language growth.

Participants were asked to retell *Frog* stories in English and Spanish over a three-year period (fall of kindergarten to spring of second grade). The English narrative retells were analyzed for macrostructure elements in this study. Descriptive statistics at each of the six time points were calculated for growth in two outcome measures: Proportion of Story Grammar Elements (PSGE Index) and Episodic Complexity Index (EC Index). Inferential statistics were employed to determine English narrative growth trajectories for these variables for SEBs. Furthermore, the impact of gender, summer vacation, and initial language proficiency was analyzed to determine the impact on outcome measures.

Results indicated distinct growth trajectories for PSGE and EC Indices that were close to linear, nonmonotonic, and discontinuous. Gender did not play a significant role in narrative macrostructure performance. Over time, participants earned significantly better scores on outcome measures. There were performance differences for children who began the study with higher initial English language proficiency on the outcome measures. Additionally, over time, final performance on outcome measures was influenced by the children's initial English language proficiency level.

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PUBLIC ABSTRACT

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Producing oral narratives is the best predictor of later literacy functioning. The ability to use performance on oral narratives as a way to identify children who may be at-risk for academic and language problems is helpful for educators. For example, it is likely that children who are identified with language impairments or who are learning English as a second language may have difficulty creating narratives due to the inherent language complexity of creating narratives. Research has demonstrated that similar to English monolingual children, narrative ability has been shown to underlie literacy development for bilingual children. Although there are numerous studies examining English narrative structure for Spanish-English bilingual (SEB) students, the literature is limited in examining episodic structure (initiating event, action, obstacle, and consequence) over time for SEB students.

The purpose of this study is to examine the narratives of one hundred eighty-nine SEB children's English narrative growth from fall of kindergarten through spring of second grade. Children's narrative retells were examined at six different time points in the fall and spring of each academic year for their ability to recall story grammar

elements and to impose a structure on these elements.

The results of this study are potentially useful to educators to understand the distinct narrative growth trajectories for young SEB children from kindergarten through second grade. Specifically, how the effect of gender, time, and initial English language proficiency impact narrative development. Findings have the potential to inform educators who make decisions regarding the need to provide additional assistance for children who may be at-risk for English language and literacy development.

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Abbie Olszewski

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CHAPTER I

INTRODUCTION

The Common Core State Standards (CCSS) were designed for all students to "build a foundation for college or career readiness by reading widely and deeply from among a broad range of high-quality, increasingly challenging literary and informational texts" (CCSS, 2011). To meet these standards, all children need to acquire oral language skills in narration, which are foundational to reading.

Understanding and producing oral language skills in narration is a complex task that requires children to integrate isolated language components such as morphology, semantics, phonology, syntax, and pragmatics. Integrating oral language skills into comprehending and producing oral narratives in monolingual English children at age 4 (Paul & Smith, 1992) and at age 5 ½ (Bishop & Edmundson, 1987) are the best predictors of later literacy functioning, especially for students who are at-risk for academic and language problems.

Similar to English monolingual children, oral narrative ability has been shown to underlie literacy development for bilingual children (August & Shanahan, 2006; Dickinson & Tabors, 2001; Miller et al., 2006; Oller & Pearson, 2002). The National Literacy Panel on Language-Minority Children and Youth has identified English Narrative ability as an area of particular concern for bilingual students because they are not meeting academic standards in fourth grade and this trend continues through eighth grade (August, Carlo, Dressler, & Snow, 2005; August & Shanahan, 2006; Pearson, 2002). To better understand how to improve English literacy skills for Spanish-English

bilingual students, we must understand the characteristics, development, and trajectory of their oral English narrative growth.

Numerous studies have been conducted examining oral English narrative structure for Spanish-English bilingual students (Álvarez, 2003; Fiestas & Peña, 2004; Gutiérrez-Clellen, 2002; Montanari, 2004; Pearson, 2002; Squires et al., 2013; Tabors, Páez, & López, 2003; Uccelli & Páez, 2007). Researchers have used a variety of outcome measures (e.g., story comprehension, story recall, holistic story scoring, story grammar elements) to examine narrative structure and have evaluated narrative structure with varying assessment frequency and times between assessments. For example, many studies have focused on examining narrative structure at one specific point in time (e.g., second grade). However, few have assessed narrative growth over multiple time points (e.g., kindergarten through second grade). Aspects of narration that have been evaluated include story propositions, story grammar elements, overall organization, story comprehension, and macrostructure elements (e.g., character, setting, plan, initiating event, action, consequence).

Although few studies examined the narrative structure of young SEB children using story grammar elements, no studies examined the ability to impose an episodic structure on the story grammar elements over multiple time points (polychromic) for young SEB children. This study has the potential to add to the literature of understanding the narrative development of young SEB children by examining episodic structure over multiple waves of data collection (polychronic).

Researchers have examined the use of individual structural elements of oral narratives (i.e., *setting, initiating event, internal response, actions,* and *consequence)* for

monolingual English children's narratives (Mandler & Johnson, 1977; Merrit & Liles, 1987; Stein & Glenn, 1979) and found English narrative skills to be developmental in nature. For example, preschool children's stories typically included a list of actions and children age 7 -8 years typically produced complete episodes (Allen, Ukrainetz, & Carswell, 2012; Estigarribia et al., 2011; Glenn & Stein, 1980; Hedberg & Westby; 1993; Hughes, McGillivray, & Schmidek, 1997; John, Lui, & Tannock, 2003; Liles, 1987; Peterson & McCabe, 1983; Price, Roberts, & Jackson, 2006; Scott, Healey, & Norris, 1995; Soodla, & Kikas, 2010).

Although a large body of literature has identified narrative developmental milestones for monolingual English children, it is unclear whether or not the oral narrative development for Spanish-English bilingual children will be the same as monolingual English children. This knowledge is especially important since it is projected that 58 million school-age children will be enrolled in public and private elementary and secondary schools and it is expected that enrollment for Hispanic students will increase 25% between 2008 and 2020 approximating 15 million students (Hussar & Bailey, 2011).

The purpose of the current investigation was to examine narrative macrostructure measured by episodic structures (i.e., initiating event, action, consequence) in the English oral fictional narratives of one hundred eighty-nine Spanish-English Bilinguals' (SEBs) to determine the narrative macrostructure growth patterns.

CHAPTER II

LITERATURE REVIEW

With an increasing amount of SEB children attending schools, it is imperative that educators understand the development of English oral language narrative skills for SEB children, which are fundamental to English literacy growth. Although research has examined narrative macrostructure development in SEB children, most of the research is limited to short time spans, which do not allow for observing fluctuations in growth. The current study examined oral English narrative skills from kindergarten through second grade to allow time for patterns to develop.

Understanding and producing oral narratives in school plays an important role in language and literacy development for SEB children. Furthermore, oral narratives are complex in nature and have been used to predict later literacy functioning, even for bilingual children because producing narratives is a culturally sensitive task. The following review will discuss these topics along with the current state of SEB narrative research.

Oral Narration Skills in School

The aim of the CCSS English Language Arts Standards is to prepare students to attain the literacy skills that they will need to be successful beyond high school. Toward this end, the curriculum is designed to expose children to increasingly more difficult forms of discourse in the hopes they will become literate to meet the demands of college or the workforce. Discourse is an umbrella term that encapsulates a variety of oral and written communication genres. Three common discourse genres that children encounter

in school settings include conversational, expository, and narrative styles (Allen, Kertoy, Sherblom, & Petit, 1994; Hughes et al., 1997; Schoenbrodt, Kerins, & Gesell, 2003; Soto & Hartmann, 2006).

On one end of the discourse continuum is conversational discourse that typically involves two individuals who take turns being the speaker and the listener (Hughes et al., 1997; Schoenbrodt et al., 2003). For example, two children may discuss what they want to play on the playground through the use of conversational discourse. Conversational discourse requires turn-taking, negotiating, and adjusting for shared knowledge between the speakers. For most children, conversational discourse develops before children enter school and represents an important context for the acquisition of basic language skills (Nelson, 1993). To have successful conversations children must integrate their knowledge of morphology, syntax, phonology, pragmatics and semantics and do so with an increasing number of diverse participants (Rubin, 1990).

On the other end of the discourse continuum is expository discourse. Expository discourse is characterized primarily by its purpose, which is to relay factual information (Hughes et al., 1997; Westby, 1994). For example, a teacher may use expository prose to explain vocabulary and concepts contained in a science lesson. Expository discourse is important because it is the primary means through which teachers teach content knowledge to students whether orally or through the use of print. Similarly, children may give oral or written reports on topics related to social studies, science, English, or history that require the use of various expository text structures. For example, one type of exposition involves comparing and contrasting how concepts, procedures, or issues are similar or dissimilar, while another involves enumerating a list of concepts that are

related to a topic in specific ways (Westby, 1994). Expository discourse is perhaps the most difficult genre for children because it is not commonly experienced early on, and it varies widely in terms of the familiarity of the content being conveyed.

A fundamental skill to literacy success is oral language and even more specifically oral narrative discourse. Narrative discourse exists in the center of the discourse continuum and involves the chaining together of temporally and causally related utterances to represent a sequence of events to an audience that acts as the sole listener and is designed to inform or entertain (Hughes et al., 1997; Petersen, 2011). Narratives are organized by series of temporal-causally related events that tell "what happened" or "who did what to whom, when and why" and are designed to entertain or inform (Calfee & Drum, 1986; Curran, Kintsch, & Hedberg, 1996; Dymock, 2007; Engel, 1995; Ilgaz & Aksu-Koc, 2005; Merrit & Liles, 1987; Petersen, 2011; Schoenbrodt et al., 2003; Scott et al., 1995; Westby, 1992). Narrative discourse is a widespread discourse structure present in most cultures and used in home, recreational, and educational environments, it is commonly used in the classroom (Dawkins & O'Neill, 2011; Hayward & Schneider, 2000; Schoenbrodt et al., 2003; Schneider, Hayward, & Vis Dube, 2006).

Narrative discourse ability is important academically because it is a frequent type of language experienced in elementary classroom settings. Narratives are accounts of a real or imagined events about a character that engages in goal-directed behavior (Stein & Glenn, 1979). Teachers use narrative discourse to instruct students and students use narrative discourse to express linguistic and content knowledge to teachers. Participation in classroom activities requires that school-age children share personal experiences during "show and tell," participate in play with peers, and relate current events and

experiences to communicative partners, all of which require skills in understanding and producing oral narratives (Westerveld & Gillon, 2008). For example, a younger child may use a narrative to talk about an experience he or she had, to recount experiences, and later on to recall and create fictional stories. An older child may use a narrative in a social studies or history class to explain the experiences of individuals during a specific time period. SEB children, as compared to monolingual English speakers, have an added challenge because they must often receive and demonstrate learning in the discourse of their second language.

Oral Narratives are a Complex Task

Fictional narratives represent the most complex type of narrative discourse (Hughes et al., 1997; McCabe, Bliss, Barra, & Bennett, 2008). Orally produced fictional narratives may be in the form of a spontaneous story or a recall of a story that was previously heard or read. Most scholars use a story recall task while conducting research to evaluate the aspects (e.g., comprehension and production) of narrative development through a formalist approach because of methodological reasons (Nicolopoulou, 1997). However, some scholars such as Nicolopoulou (1997) argue for a sociocultural approach that allows for examination of the "role that narrative plays in children's construction of reality and of individual and collective identity." This approach uses a variety of spontaneous story telling tasks. The formalist and sociocultural approach to examining children's narratives provides insight into the complexity of narratives.

Creating and understanding narratives requires highly developed cognitive-linguistic skills (Johnston, 2008; Klecan-Aker & Colson, 2009; Klecan-Aker & Gill,

2005) because the speaker is required to integrate conceptual, semantic, and pragmatic information (Le, Coelho, Mazeiko, & Grafman, 2011). More specifically, the coordination of story structure, content, vocabulary, and context make narratives an academically challenging skill.

Fictional narratives typically follow a specific story grammar structure (Hughes et al., 1997). Story grammar refers to the overall structure of the narratives that describes a character and the goal-oriented actions by the character (Stein & Glenn, 1979). A narrator telling a fictional narrative may use specific elements such as initiating event, action, and consequence, which constitute an "episode" when chained together or a series of episodes. A more complex narrative contains episodes embedded within episodes and several characters.

Forming a narrative requires a speaker to provide content by coordinating several domains of language (vocabulary, morphology, phonology, syntax, pragmatics) while including the listener's perspective. For example, fictional narratives require children to integrate story structure with appropriate linguistic cohesive devices (e.g., conjunctions, pronomial references), content (vocabulary, concepts), and context (use language to create a context rather than relying on other cues).

Narrative language requires the use of explicit vocabulary and complex sentence structures as opposed to the more basic vocabulary that is used in conversational discourse (Stadler & Ward, 2010). Narratives contain longer, more complex language than conversational language in which speakers are free to choose the words and sentence structures they use (Hayward & Schneider, 2000; Price et al., 2006; Schneider et al., 2006).

Furthermore, children also need to consider the environment in addition to the language used when telling a story. For example, the context in which the speaker tells the narrative and the culturally shared knowledge the speaker and listener share affect how the narrator chooses words and structures the amount of information in a narrative (Hayward & Schneider, 2000; Johnston, 2008; Jorgensen & Togher, 2009; Kail & Hickmann, 1992; Shapiro & Hudson, 1991; Ukrainetz & Gillam, 2009). Depending on the environment the child is producing the story; the narrative may have either contextualized or decontextualized information or both.

In a narrative with contextualized information, meaning may be conveyed through cues within the environment, shared knowledge among speaker and listener, and extralinguistic devices (e.g., facial expression, gesture, intonation; Curenton & Justice, 2004). However, in many instances within the school context, narrators must use decontextualized language to convey meaning when they tell fictional narratives. For example, when telling a story about an experience that is not in the immediate environment to a listener who is not familiar with the experience, the child adjusts how much details and explanations to provide for the listener. Since the information is decontextualized, the child may need to use more formal language or more explicit details to explain the story.

Narratives that contain decontextualized information are highly valued in academic settings because they contain information (content, action, etc.) that is not immediately available in the shared environment because they require the use of more complex language skills than when all of the available information and context is present for the listener (Curenton & Justice, 2004; McCabe & Bliss, 2003). Telling fictional

narratives with decontextualized information is a challenging task because it requires different linguistic knowledge than when conversing about concepts or activities present in the immediate environment (Curenton & Justice, 2004). One might expect a child who has difficulty with language to also have difficulty integrating isolated language skills into a narrative, especially when decontextualized language is necessary. Additionally, one might also expect that children who only have knowledge of contextualized language to also have challenges effectively communicating. One group of children in schools who may be at-risk for language difficulties such as the ones previously mentioned is SEB children.

Oral Narratives as a Predictor

Given the linguistic complexity that is inherent in oral narratives, it is not surprising that researchers, clinicians, and educators frequently elicit fictional narratives as a way to assess oral language proficiency and the ability to tell stories, as narration has also been identified as a predictor of language skills. For example, narration skills during preschool have been found to predict later oral language development (Bishop & Edmundson, 1987; Feagans & Applebaum, 1986; Price et al., 2006; Schneider et al., 2006; Stadler & Ward, 2010; Wellman et al., 2011) and to be a foundational skill for the acquisition of reading (Bishop & Edmundson, 1987; Cunningham & Stanovich, 1997; Feagans & Applebaum, 1986; Fiestas & Peña, 2004; Hemphill & Snow, 1996; Kohnert, Windsor, & Ebert, 2009; Price et al., 2006; Westerveld & Gillon, 2008). A study by Feagans and Applebaum (1986) showed that first grade children who demonstrated strong narrative skills performed better on reading and math standardized tests than

children who had weaker narrative skills. Therefore, the examination of children's narratives has the potential to play an important role in diagnostic and prediction decisions in academic settings.

More recently, Miller et al. (2006) examined whether measures of oral language (lexical, syntactic, fluency, and discourse measures) collected under narrative conditions would predict reading achievement within and across languages in bilingual children. Narrative retells of 1,531 Hispanic/Latino Spanish-speaking English language learners were obtained using a *Frog* story narrative at six different time points from kindergarten through third grade to establish the English and Spanish oral language proficiency over time and to evaluate which oral language features were associated with reading proficiency skills in English and Spanish. Results indicated English oral language measures predicted Spanish reading scores and Spanish oral language measures predicted English reading scores.

There is a strong relationship between narrative language ability and school performance (Feagans & Applebaum, 1986; Price et al., 2006; Wellman et al., 2011). Narratives have been shown to predict reading and academic achievement (Griffin, Hemphill, Camp, & Wolf, 2004) and to differentiate typical from atypical development (Bishop & Donlan, 2005). For example, narrative difficulties have been documented in children with learning disabilities (Norris & Bruning, 1988), hearing loss (Young et al., 1997), Down syndrome (Boudreau & Chapman, 2000) autism (Capps, Lush, & Thurber, 2000) and intellectual disability (Hemphill, Picardi, & Tager-Flusberg, 1991; Pearce, McCormack, & James, 2003). Because producing narratives is a linguistically

challenging task, children who have cognitive deficits often exhibit challenges understanding and producing narratives (Boudreau & Chapman, 2000).

Children with superior knowledge about narratives have a number of academic advantages (Boudreau, 2008). For example, narrative knowledge is associated with better classroom listening (Davies, Shanks, & Davies, 2004), comprehension (Garner & Bochna, 2004), and improved writing skills (Fitzgerald & Teasley, 1986). Studies have shown that retelling stories improves story comprehension, recall of story information, the use of story grammar elements in oral and written stories, and oral language complexity (John et al., 2003).

Because oral language proficiency and the ability to understand and produce narratives is a good predictor of future literacy skills, it is important to evaluate English language proficiency and oral narratives early in a child's educational process to help determine if the child may be at-risk for future literacy skills, especially for SEB children who speak two languages. Since there is limited information on the English oral narrative growth trajectories of young SEB children, it is necessary to understand their development over time and how initial English language proficiency in younger years may impact developmental trends. Understanding and identifying factors that may impact growth have the potential to facilitate the decision-making process of when children may need additional assistance in the academic setting to ensure they have adequate literacy skills before leaving high school.

Oral Narration and Literacy Development for Bilinguals

A significant number of SEB children who attend school in America are learning

oral language and literacy skills in a second language (Lesaux & Geva, 2006). Cognitive and linguistic skills needed to acquire language literacy in their primary language are the same for their secondary language (Bialystock, 2007). For example, SEB children need to exhibit the following in both languages to develop literacy skills: (1) demonstrate oral language proficiency, (2) have representational concepts of writing, and (3) use metacognitive processes and strategies for reading. English oral language skills for SEB children often lag behind those of monolingual English peers. SEB children require between 2 and 5 years to achieve basic interpersonal communication skills equivalent to monolingual English age norms (Bialystock, 2007). It takes even longer, between 4 and 7 years, for SEB children to meet grade-level standards in academic and literacy achievement (Collier, 1987; Cummins, 1991; Hakuta, Butler, & Witt, 2000). SEB children also need to acquire additional decoding skills, the ability to match sounds to letters, because writing systems are language dependent and need to be relearned for each new writing system (Bialystok, Luk, & Kwan, 2005). Because oral language proficiency plays an important role in children's literacy skills, SEB children may face more challenges than their monolingual peers in meeting age-expected standards.

The National Literacy Panel on Language-Minority Children and Youth has identified English narrative ability as an area of concern for bilingual children. Because narrative skill predicts later literacy skills, it is important to understand narrative development for SEB children who make up the largest number of bilinguals enrolled in schools is a group of children who learned Spanish as their first language (Ballantyne, Sanderman, & McLaughlin, 2008). Educators will encounter increasingly more children in their classrooms whose primary language is Spanish and whose secondary language is

English (e.g., Spanish-English Bilinguals; SEBs; Durán, Cheatham, & Santos, 2011). Most of the research on literacy development has been conducted with monolingual speakers. Similar to monolingual English speakers, analyzing oral narrative ability is important for understanding SEB literacy development.

The current study examined how young SEB children develop English oral narrative skills over time. It is likely that the growth trajectories of bilingual children will vary from monolingual children since oral language skills and academic language skills take longer to develop than monolingual speakers. Specifically, it was anticipated that children who had less English language proficiency skills would perform differently than children with higher English language proficiency skills.

Narratives as a Culturally Sensitive Task

Much of the literacy developmental research on monolingual English children has been conducted using narratives. Researchers have elicited narratives from children in order to study linguistic development across a variety of culturally and linguistically diverse populations. Specifically, eliciting narratives from monolingual and bilingual children have been conducted to examine macrostructure and microstructure narrative elements to determine cross-cultural and cross-linguistic comparisons between and across languages.

Narratives are believed to be a culturally sensitive task for many diverse language users. Particularly, a significant amount of research has been conducted using *Frog* stories (e.g., *Frog, Where Are You? Mayer, 1969)* with grade-school children all over the world including, but not limited to, the United States, Latin America (Argentina, Chile,

Mexico, Spain), Turkey, Israel, and Germany (Berman & Slobin, 1994; Pearson, 2002). Anthropological linguist David Wilkins examined Mercer Mayer's *Frog, Where Are You?* for its cultural specificity (Berman & Slobin, 1994) and concluded that the picture book was clearly from a Western cultural perspective. The six or seven essential frames for the story were deemed to be sensitive to the above-mentioned cultures. He stated that many preschool children experienced these essential frames either through direct experiences or experiences with pictures, storybooks, movies, and television.

Seminal work by Berman and Slobin (1994) introduced the notion of analyzing narrative retells elicited with a wordless picture book. Their large-scale study used *Frog, Where Are You?* to compare monolingual speakers from different linguistic backgrounds. Berman and Slobin (1994) examined narrative skills (plot components, event components, relation between two events in pictures, inter-utterance connectivity, temporal anchoring, interclausal connectivity, and organization of narrative segments) in fictional narrative retells of 268 monolingual speakers representing five different languages (English, German, Spanish, Hebrew, and Turkish) in three major age ranges (preschoolers, school-age children, and adults). These ages were selected to determine patterns in narrative development from pre-literacy (3 to 5 years of age) to a period of familiarity with 'book-based traditions of culture' (school-age children) to adult literacy (18 to 40 years of age). Participants were asked to view the wordless picture book *Frog, Where Are You?* (Mayer, 1969) and then tell the story. Findings revealed narratives were products of specific languages and each language had its set of constraints to allow for the individual to produce language with specific linguistic form and function.

Furthermore, patterns across ages were seen in all of the languages studied, displaying a developmental pattern of discourse development.

The elicitation of narratives using the wordless picture book *Frog* stories by Mercer Mayer appeared to be culturally sensitive and was able to elicit narratives that demonstrated developmental patterns. The current study examined the English oral narrative language samples that were collected using *Frog* stories by Mercer Mayer, which have been deemed culturally sensitive, during a retell activity.

The State of Narrative Discourse Research for SEBs

Some studies have utilized narratives as a context for examining specific language features and other studies have examined narration as a target for instruction (Hoffman, 2009). Because the current study was designed to examine the development of narrative structure (narrative as a target) in SEB children, the following section will review literature that has examined narratives as a target (the dependent variable; Hoffman, 2009) in young SEBs. In comparison to other areas of language, we know very little about the English developmental trajectories for narrative discourse in children who are SEBs from the relatively few studies conducted (e.g., Álvarez, 2003; Fiestas & Peña, 2004; McCabe & Bliss, 2004-2005; Muñoz, Gillam, Peña, & Gulley-Faehnle, 2003; Pearson, 2002; Schoenbrodt et al., 2003).

This corpus of studies has examined narration in SEB children using different assessment approaches (*monochronic, diachronic*, and *polychromic*), utilized various elicitation formats, and included participants who differ widely in their ages. *Monochronic* assessment refers to the practice of assessing participants' languages at one

time point and has been used in several studies of SEB narrative skill (e.g., Fiestas & Peña, 2004; Gutiérrez-Clellen, 2002; Muñoz et al., 2003). *Diachronic* assessment is the tradition of assessing language at two time points and is the most common when examining language development in SEBs (e.g., Montanari, 2004; Pearson, 2002; Peña et al., 2006b; Schoenbrodt et al., 2003). *Polychronic* assessment is the practice of assessing language at more than two time points. This approach has rarely been incorporated to examine narration in SEBs (i.e., Álvarez, 2003; Tabors et al., 2003).

The most valuable information regarding growth may be obtained in longitudinal design studies that incorporate polychromic assessment approaches, which the approach of the current study. In polychromic assessment, children are assessed more than twice. Most studies of SEB narrative skill have incorporated monochromic or diachronic assessment. A table of these studies is in Appendix A.

A number of elicitation formats have been incorporated within and across the corpus of studies that have examined narrative skill in SEBs. In general, examiners have asked children to produce spontaneous narratives, to retell stories, or have included both contexts. Materials used for elicitation included wordless picture books, short silent movies, and story stems. A majority of studies used wordless picture books, notably, a variety of *Frog* stories by Mercer Mayer (Álvarez, 2003; Fiestas & Peña, 2004; Gutiérrez-Clellen & Simón- Cerejido, 2009; Montanari, 2004; Muñoz et al., 2003; Squires et al., 2013) or a video based on *Frog* stories (Fusté-Herrmann, Silliman, Bahr, Fasnacht, & Federico, 2006; Gutiérrez-Clellen & Heinrichs-Ramos, 1993; Gutiérrez-Clellen & Iglesias, 1992). Caution should be taken when comparing results across studies with different elicitation procedures as the focus of the study may vary influencing the

aim of the results. Different narrative elicitation contexts have been shown to yield slightly different oral language samples in terms of length, language complexity, and whether or not specific story elements are included (Fiestas & Peña, 2004; Gazella & Stockman, 2003; Iglesias & Gutiérrez-Clellen, 1986); however most studies have used a retell format.

The body of research that has examined narrative macrostructure elements for SEBs consists of participants who ranged in age from 4 years to 11 years. However, most studies have included participants who were age 6 or older (e.g., Álvarez, 2003; Fiestas, & Peña, 2004; Peña, Bedore, Gillam, & Bohman, 2006a; Schoenbrodt et al., 2003; Squires et al., 2013; Tabors et al., 2003; Uccelli & Páez, 2007). The current study followed children from kindergarten through the end of second grade and elucidated the development of English narratives for SEB children during this important time of growth.

Monochronic Assessment

There were four studies that contained monochromic assessment (i.e., Fiestas and Peña, 2004; Gutiérrez-Clellen, 2002; Muñoz et al., 2003; Pearson, 2002). All four of these studies used different measures to evaluate narrative growth.

One of these studies measured propositions in story recall tasks and answers to story comprehension questions to evaluate narrative growth. Gutiérrez-Clellen (2002) examined the narrative abilities (narrative recall and story comprehension) in Spanish and English narrative retells for 33 typically developing second grade SEBs to determine if differences in narrative performance were related to proficiency in each language. For the story recall task, a bilingual examiner asked children to listen to stories in English (*The Tiger's Whisker)* and Spanish (*El Naufragio [Shipwrecked]*) and then asked the

children to retell the story. Half of the children heard the English story first and the other half heard the Spanish story first.

Story recall was measured by evaluating whether or not children's narratives matched the original story and coded as recalled, related inferences, or unrelated inferences. Specifically, propositions were coded as recalled if the child stated it exactly how it was in the story. Related inferences were statements not included in the original story but could be logically inferred. Unrelated inferences were statements not in original story and could not be logically inferred. For the story comprehension task, children were asked factual (e.g., "who," "what," "where," "when") and inferential questions (e.g., "why," "what if," "main idea," "cause-effect"). The answers to the story comprehension questions were also transcribed. Answers to both the factual and inferential questions were considered correct or incorrect.

Findings revealed differences of narrative performances in Spanish and English only when using narrative recall tasks versus a spontaneous narrative task. The children were able to produce spontaneous narratives in both languages, whereas, most children performed better on story recall and comprehension in English than in Spanish for the narrative recall tasks. Children who had poor recall in one of the languages also demonstrated poor story comprehension in that language suggesting the high demands of narrative recall might affect story comprehension. The authors proposed that children performed better in English recall than in Spanish may have been due to differences in the difficulty level of the stories and/or children's differences in vocabulary and literacy experiences in Spanish, which may affect their ability to comprehend narratives in

Spanish. There were also differences within and across languages on narrative performances for narrative recall and spontaneous tasks.

Results suggest the importance of using more than one type of language task (recall and recall assessments in English may provide the best knowledge of narrative knowledge as most children performed better in English story recalls than in Spanish story recalls. Similar to this study, the current study used a narrative recall task to examine English narratives as English narratives were shown to elicit the highest narrative skill.

Similar to Gutiérrez-Clellen (2002), Pearson (2002) evaluated narrative growth by measuring story structure. However, Pearson (2002) used holistic measures rather than coding recalled information as recalled, related inferences, or unrelated inferences. Pearson (2002) examined oral language and narrative skills in the narratives of two hundred forty monolingual English speakers and SEB speakers who were in second and fifth grades. Examiners asked children to narrate the wordless picture book, "*Frog, Where Are You?"* (Mayer, 1969). All narratives were told in English one day and in Spanish on another day and were audio recorded. Narratives were scored for language elements (verb forms, conjunctions, adverbs, and vocabulary) with a total of 48 points possible (e.g., complex syntax, 24 points; lexicon, 12 points; morphosyntactic accuracy, 12 points) and story narrative elements (story structure, orientation, flow of information, metacognitive statements, and temporal links). Findings revealed similarities and differences between monolingual and bilingual speakers. There were similarities for complex syntax (elaborated verb phrases, complex adverbials, sentence embedding). There were differences between the groups for vocabulary and morphosyntax skills.

Pearson concluded that there is strong support for cross-linguistic transfer of narrative macrostructure skills but not for vocabulary or morphosyntax. Based on the results we would expect to see story elements and complex syntax transfer between languages and little transfer of lexical or morphosyntactic skills between the two languages. The current study evaluated English narratives as part of a set of future research that will include Spanish narratives.

Similar to Pearson (2002), Fiestas and Peña (2004) evaluated narrative development by measuring story structure. However, Fiestas and Peña (2004) used a story grammar framework rather than using holistic measures. Fiestas and Peña (2004) examined language productivity (total words, number of C-units, and mean length of C-unit) and story grammar (setting, initiating event, internal response, plan, attempt/action, consequence, ending) in fictional narrative tells of twelve SEBs between the ages of 4;0 and 6;11 during two different elicitation tasks. In the storybook task, the examiner showed the wordless picture book *Frog, Where Are You? (*Mayer, 1969) to the child and then prompted the child to tell the story. In the picture task, the examiner showed the child a picture of a traditional Mexican American family birthday party and provided the child with four prompts to elicit a narrative. The elicitation conditions were counterbalanced by task and language. All narratives were recorded and transcribed by two bilingual research assistants.

Productivity was measured by mean length of C-unit in words, number of C-units, and number of words for each story. Grammaticality was scored for each utterance ranging in codes from grammatical (no grammar errors), ungrammatical (e.g., verb

omission-“she not hurt”), and to influenced (e.g., nonobligatory possessive “s”, “Miguel ate Mario tacos”).

Story grammar was coded for setting, initiating event, internal response, plan, attempt, consequence and ending based on Glenn and Stein (1980). Each narrative was scored for overall narrative complexity using range of level 0 through level 7 in increasing complexity (Hughes et al., 1997). For example, Level 0 indicated a story could not fit into a level. Level 1 included descriptions of characters, surroundings, and habitual actions with no causal relations. Level 4 referred to a narrative that provided aims or intentions of a character but did not explicitly state the character’s plant to achieve the aim. Level 7 indicated a narrative was a chain of reactive sequences or abbreviated episodes.

Findings revealed language productivity in both elicitation tasks were not statistically different in Spanish or English narratives for number of C-units, MLU-words, and number of words. Grammaticality was analyzed in narratives from both elicitation tasks and showed no statistical difference in either task or language. There was a statistical difference between Spanish and English narratives from the storybook task. Narratives that were told in Spanish included *initiating event* and *attempt* more frequently than in English narratives. Narratives in English included *consequence* more frequently than narratives in Spanish. Because of the variety of responses with the picture task, story grammar elements were not analyzed. Results indicated that children told equally complex narratives in both languages but Spanish narratives contained more occurrences of initiating event and attempt whereas English narratives included more occurrences of consequence. These results suggest that we would expect to see similar

overall performance across languages but qualitative differences between languages for SEBs who are between 4 and 7 years old.

Similar to Fiestas and Peña (2004), the current study examined oral English narrative growth within a story grammar framework. However, instead of measuring story structure levels, the current study examined the ability to impose a structure on the story grammar elements using complete and complex episodes.

Like Fiestas and Peña (2004), Muñoz et al. (2003) also examined story structure. However, Muñoz et al. (2003) evaluated story structure using more fine-grained analysis of story grammar elements rather than holistic story structure elements (e.g., structure, orientation, flow of information). Muñoz et al. (2003) examined language productivity, sentence organization, and story structure in a spontaneous narrative of 24 SEB children equally divided into a younger group (average age was 5) and an older group (average age was 12) from low socioeconomic environments to determine if language and narrative measures were sensitive to developmental differences in narratives produced by SEB children.

Participants were asked to view a wordless picture book (*Frog, Where Are You?)* and tell a story in English. Language productivity was measured calculating total number of words and total number of different words. Sentence organization was measured by calculating the number of utterances, mean length of C unit in words, and percentage of grammatically acceptable utterances. Story grammar was measured by calculating the frequency of story grammar propositions (setting, initiating event, attempt, plan, internal response, reaction, and consequence). Each of these narratives also calculated the

number of complete episodes (minimally contained initiating event, attempt, and consequence) and incomplete episodes (contained two of the three critical elements).

Although findings revealed the length of the stories did not significantly differ by age, older children tended to produce narratives that were longer, more grammatical, and contained more complete episode than younger children. Results suggest that language productivity measures may not be sensitive to developmental differences for SEB children from low SES environments. In contrast, measures of sentence organization and story grammar (episodic structures) demonstrated sensitivity to developmental in children's narratives. Similar to this study, the current study focused on evaluating narrative development by measuring episodes produced during oral English narrative retells.

Examining Incremental Change

The current study employed similar methods to evaluate oral English narratives. However, the current study only examined the minimally required elements for a narrative (initiating event, action, consequence) and expanded the episode structure. The current study examined more incremental changes in the ability to impose a structure on story grammar elements by differentiating complete and complex episodes.

Diachronic Assessment

Diachronic assessments are able describe development whereas monochromic assessments only describe what children are able to do at one particular point in time. There were four studies that contained diachronic assessment (i.e., Montanari, 2004; Schoenbrodt et al., 2003; Squires et al., 2013; Uccelli & Páez, 2007). All four of these

studies differed with respect to measures and different time spans between assessments to evaluate narrative growth.

The shortest time between assessments was in an intervention study. Schoenbrodt et al. (2003) examined the effectiveness of an 8-week narrative intervention program for 12 SEBs between the ages of 6 and 11 years by measuring communicative competencies (communication units, words, and clauses) to determine if intervention in a children's native language would improve their communication skills. Examiners asked children to produce one story retell and one story generation task before and after intervention. Each narrative was assessed for story grammar elements using Merritt and Liles' (1987) 11 questions about elements. Narrative style was measured using 11 questions defined by Hutson-Nechkash (1980) and Merrit and Liles (1987) such as transitions, adequate topic maintenance, sufficient detail, and cohesion. The intervention was once a week for 8 weeks after school during a tutoring program using the bilingual book *Rainbow Fish* (Pfister, 1992). The instruction for the control group was in English and was in Spanish for the experimental group. The first three intervention sessions focused on presenting the story to the students using three strategies: (1) presenting and defining vocabulary, (2) using visual organizers, and (3) using extensions to prompt critical thinking. The story grammar marker (SGM; Moreau & Fidrych-Puzzo, 1994) was presented during the fourth and fifth session. During the last two sessions, the children were exposed to a similar intervention with a new bilingual book *Guess How Much I Love You* (McBratney, 1995).

Findings revealed that use of story grammar elements improved for both groups in story retell and story generation tasks suggesting that the instruction was effective. In

comparing the performance between groups, children who received instruction in Spanish performed significantly better in narrative style (transitions, adequate topic maintenance, sufficient detail and cohesion) than children receiving instruction in English, their second language in the story generation task but not in story retell task. Independent of group, communication units, words, and clauses improved in story retell tasks but not in the story generation task. Results from this study suggest we would expect to see differences in performance between story generation and story retell task dependent on language. Additionally, SEBs demonstrated an increase in use of narrative story grammar elements and narrative style after instruction.

The current study examined also examined narrative development over time in children who were 5 to 7 years old and used a more detailed story grammar analysis using story grammar elements and episodes than answering questions regarding the story structure.

The second shortest time span between assessments was six months. Montanari (2004) examined thematic, evaluative and linguistic aspects of narratives told in Spanish and English for three children aged 5 years old. Children demonstrated varying degrees of English and Spanish language proficiency. Examiners presented a wordless picture book *Frog, Where Are You?* (Mayer, 1969) to the children to look through and then asked them to tell a story in English. One week later, the procedure was repeated in Spanish. Six months later, the same procedure was repeated with the book *A Boy, A Dog, and A Frog* (Mayer, 1967) but this time the participants told the story in Spanish first and then in English one week later.

The author and bilingual graduate students transcribed all narratives. Each utterance in the narratives was categorized using a narrative scoring system similar to Halliday (1970) that identified three language functions (ideational dimension, interpersonal dimension, textual dimension). The Ideational Dimension referred to the overall organization and was measured by identifying three critical elements in the story (onset of lot, unfolding of plot, and resolution of plot) that were assigned relative points with respect to each other. The Interpersonal Dimension referred to how language was used to express social roles by making use of evaluative and audience-engaging devices. Assigned weighted points to mention of a character's state of mind and the use of engaging prosodic features was calculated to measure the Interpersonal Dimension. The Textual Dimension referred to the temporal perspective and cohesion between utterances. Weighted points were awarded for temporal perspective (maintaining or shifting tense) and cohesion (reference, connectivity, and fluency).

The findings from the Ideational Dimension analysis revealed that children exhibited the skills to tell a cohesive story in their native language of Spanish. Yet, their narratives in English were not as coherent and cohesive as their Spanish narratives. The findings from the Interpersonal Dimension analysis revealed that children were able to evaluate their narratives in Spanish and English regardless of their language proficiency. The findings from the Textual Dimension revealed temporal perspective and cohesive devices increased with age and both languages equaled each other at the second data collection time point. In summary, this study showed that language proficiency affected children's ability to tell a cohesive and coherent narrative. We would expect to see most

aspects of narrative competence affected by language proficiency rather than actual ability.

The current study also examined English narrative growth over time for similar aged children. Like this study, the current study also examined how initial English language proficiency affected English narrative development.

The next two studies examined narrative development over a one-year period between assessments and over the same time span from kindergarten through first grade. Uccelli and Páez (2007) examined oral language proficiency (oral vocabulary, narrative productivity, narrative quality) for 24 SEBs from low socioeconomic backgrounds from the end of Kindergarten to the end of first grade. Children were pseudo-randomly (based on availability of assessor and testing times) tested in one language (Spanish or English) and then one week later in the other language. Children were asked to look at three pictures characterizing a main plot (girl/dog get lost, family looks for her/them, and father finds her/them). After viewing the pictures, they were removed and children were asked to "Tell me what happened in the pictures." All narratives were recorded and transcribed by a bilingual researcher.

Oral vocabulary was assessed using a standardized measure (Picture Vocabulary subtest form Woodcock Language Proficiency Battery; Woodcock & Muñoz-Sandoval, 1995) in Spanish and English. Narrative productivity was measured by word frequency counts and total number of words. Narrative quality was measured by adding story quality (holistic score measuring story structure) and language quality (syntax, nouns, reference clarity) components into a total narrative quality score.

Findings on the picture vocabulary assessment revealed English and Spanish

vocabulary were below norms in comparison to monolingual peers at the end of first grade with mean scores of 81.42 and 60.87 respectively. English vocabulary improved over time (69.54 to 81.42) but Spanish vocabulary did not (62.50 to 60.87). Total number of different words was more sensitive in measuring English language productivity than total number of words. Interestingly, there were only significant differences in the Spanish narrative story score but no significant differences in the English narrative story score. Regression analysis results indicated Kindergarten Spanish story structure predicted first-grade English narrative quality and Spanish narrative quality was best predicted by kindergarten Spanish vocabulary.

Results from this study provided a narrative holistic score but did not examine the ability to provide elements in terms of episodic structure. The current study employed a more fine-grained analysis into what makes a quality story by examining elements as part of an episode in English narratives.

Squires et al. (2013) examined the narrative macrostructure (character, setting, initiating event, plan, action, consequence, internal response) and microstructure (coordinating and subordinating conjunctions, mental-linguistic verbs, adverbs, elaborated noun phrases) in narrative retells of twenty-one typically developing and language impaired SEBs over a chronological period of one year (over two school years, kindergarten through first grade) to document development patterns in the narratives of SEBs. The examiner provided a model story using one of two wordless pictures books, *Frog on His Own* (Mayer, 1973) or *One Frog Too Many* (Mayer & Mayer, 1975), in English and Spanish and then asked participants to retell the story. All narratives were digitally recorded and transcribed. Macrostructure and microstructure elements were

scored using a version of Tracking Narrative Language Progress (TNL-Pr; Gillam & Gillam, 2009) on a four-point scale ranging from a score of 0 to 3, with higher scores reflecting more complex elements which were added to yield total macrostructure and microstructure scores.

Findings revealed that children with language impairments scored lower on macrostructure and microstructure elements than typically developing children in both English and Spanish narratives in kindergarten and first grade. Spanish kindergarten macrostructure scores predicted English first-grade macrostructure scores. English microstructure scores at kindergarten were linearly related to Spanish microstructure scores at kindergarten and first grade. The Spanish microstructure scores at kindergarten were not related to English microstructure scores at either kindergarten or first grade.

These findings suggest that there were similarities in macrostructure for both Spanish and English but there were differences between performance on microstructure performance in Spanish and English for typically developing and language impaired SEBs. Results provided information regarding the production of macrostructure elements and cross-linguistic similarities of these elements. It also demonstrated differences between macrostructure and microstructure elements across languages. This study did not provide information regarding the relationship of elements produced in relation to an episode. The current study examined story grammar elements as they relate to episode structure and the ability to impose structure to these elements during the production of oral English narratives.

Polychronic Assessment

There were a couple of polychromic assessment studies (more than two assessment points) found that examined SEB children's narrative growth over time. These studies provide information regarding growth over time; however, there is still a lot to be learned about English narrative growth trajectories for SEB children. One of these studies incorporated a longitudinal design utilizing three assessment time points (Álvarez, 2003). Another study was in progress and will continue to examine language and literacy development in SEB children from pre-K to second grade with assessments in the fall and spring of each school year (Tabors et al., 2003). The results from the fall to spring of pre-K will be reviewed.

Álvarez (2003) examined one aspect of narrative discourse (the development of character) for one SEB child during narrative production tasks collected over 5 years from age 6;11 to 10;11 to determine the development of first mentions and to indicate the possible influence of one language system on another. First mentions of a referent can be introduced by a local or global marking. Local marking designates the referent in a noun phrase, for example, "Then, *a* big frog came out of the plants and the boy got scared." A global marking designates the whole clause, for example, "Out of the plants came *a frog*."

The examiner gave the one participant the wordless story book *Frog, Where Are You?* (Mayer, 1969) to look through and prompted him or her to tell the story when ready in English and then a week later in Spanish at ages 6;11, 7;11, 8;11, 9;11, and 10;11. The number of clauses used was calculated for each narrative. The proportion of adequate first mentions for animate characters was calculated and presented as a percentage. The

frequency of postverbal and preverbal mentions and preverbal and postverbal unmarked and marked noun phrases for first mentions were calculated and presented as a percentage. The frequency of mentions of inanimate objects and the relation of the inanimate object to the type of predicate were also calculated and presented as a percentage.

Findings revealed that the ability to reference an animate character developed at the same accuracy in English and Spanish narrative language samples (e.g., 56%, 78%; 78%, 89%; 78%, 89%; 78%, 100%; and 89%, 67%). It was noted that the English narratives introduced character in the subject position of the sentence more frequently than Spanish narratives where more subjects were introduced in postverbal positions, demonstrating the participant taking advantage of the grammatical flexibility of Spanish. Álvarez also examined the semantic and syntactic elements that may have promoted or hindered first mention of animate characters. Results indicated both languages were affected to the same degree by semantic and syntactic language features. The first mention of inanimate objects was similar in both English and Spanish.

Differences were noted between English and Spanish in the use of definite and indefinite article when inanimate objects were first introduced. In English, definite forms vacillated with a sharp decrease in definite forms at 7;11, followed by a large increase and then a slight decrease, whereas the definite form in Spanish was more stable over the years around 30% to 40% and only decreasing to 22% in the last story. The authors suggested this could be a reflection of language-specific characteristics. For example, native adult use of indefinite forms varies between languages for monolingual speakers (e.g., French 78%, English 64%; Hendriks, 1998; Hickman, Hendriks, & Roland, 1998).

Results provided information about one specific macrostructure element, character, for one child. Álvarez (2003) examined a specific story element rather than an overall proficiency measure. The current study also examined story grammar elements but it examined them as an episodic structure of a story. Furthermore, the current study examined a much larger sample size than one participant.

Tabors et al. (2003) examined the language and early literacy skills of 344 bilingual children who were 4 years of age from Spanish-speaking homes to determine how pre-kindergarten experiences are related to language and early literacy skills in Spanish and English. Three hundred forty-four SEB children were from Massachusetts and Maryland and the 152 monolingual Spanish comparison children were from Puerto Rico. A language and literacy battery (i.e., phonological awareness; vocabulary; letter and word recognition; writing and spelling; general language ability; discourse skill; concepts about print, listening comprehension, story retelling, and decoding) was administered in the fall as they entered pre-kindergarten.

Findings revealed that the children living in the United States performed better on the early literacy skills than on oral language tasks in both English and Spanish. This may be indicative of a by-product of learning a societal second language. A correlational analysis of the bilingual children revealed that language and early literacy skills in Spanish and English are positively correlated, as one language improves, so does the other. Results indicate that the bilingual children's limited vocabulary may put them at-risk for literacy skills as vocabulary size and early reading ability are highly correlated (Snow, Burns, & Griffin, 1998). Interestingly, when the bilingual and monolingual children were compared, the monolingual children performed better than the bilingual

children on two oral language skills, Picture Vocabulary and Memory for Sentences. Because both sets of children came from similar familial background and socioeconomic status, it is likely that the difference may be due to learning two languages.

This study is ongoing and will track the language and early literacy development of these children over time. This study indicates that bilingual children's language and early literacy skills may vary over time depending on exposure to each of the languages. The current study also addressed the issue that young SEB children's narrative growth may change over time and how English language proficiency has the potential to influence English narrative development.

In summary, there were some common topics between the studies including type of task, lingualism, and developmental findings. There were two popular elicitation tasks used to examine narratives, have children tell a spontaneous story (no model) or to listen to a model story and retell that story. There have been mixed results on which task generates better narrative performance. We learned there are multiple ways to evaluate narrative structure (e.g., holistically, for propositions, answering questions, ability to sequence, use of references, organization, story grammar element questions, story grammar elements, episodic structures). Lingualism refers to how an individual views the world through language. Furthermore, it refers to how an individual produces narratives through language. The results from the studies were mixed with some studies favoring English narrative performance than Spanish and vice versa. Other studies have found that narrative macrostructure transferred across languages and bilingual children in the U.S. performed better on early literacy skills in both English and Spanish than monolingual Spanish speaking children in Puerto Rico.

Although there is a small corpus of studies examining narratives as a target in SEB children, the literature is limited in depth. To date, the current literature lacks a study that examines the narrative macrostructure growth of young SEB children with a large sample of children over several years.

Analyzing Narratives

Elicitation

There are a number of established methods to elicit narratives from children. Miller et al. (2006) recommended that producing oral language in a communicative context, such as narration, should be the gold standard for oral language assessment. For example, children may be asked to look at pictures in a book and then tell their own make-believe story (Justice, Bowles, Pence & Gosse, 2010). Alternatively, children may be asked to listen to a story while looking at pictures, and then retell it to an examiner (Heilmann, Miller, Nockerts, & Dunaway, 2010). To date, many researchers in narrative research have used "frog" books as a way to elicit a narrative. In 1994, Berman and Slobin reported that at least 150 researchers used "frog stories" to collect information on language in 50 languages.

The review of literature on evaluating narratives for young SEB children demonstrated two major ways to elicit narratives: spontaneous and retells. Different narrative elicitation contexts (spontaneous and retells) have been shown to yield slightly different oral language samples in terms of length, language complexity, and whether or not specific story elements are included (Fiestas & Peña, 2004; Gazella & Stockman, 2003; Iglesias & Gutiérrez-Clellen, 1986).

Story retelling is a popular method for eliciting language samples. Performance on story-retelling task in kindergarten has been shown to predict the need for academic remediation during first and second grade (Fazio, Naremore, & Connell, 1996). The advantages of using a story-retelling task to elicit narratives for assessment are many. Research suggests that story retelling yields longer oral language samples that include more story elements than story generation tasks (Merritt & Liles, 1989). These results have been shown to hold for children who are SEB (Muñoz et al., 2003). For example, when children are asked to retell a story, the examiner has the advantage of being able to control the story length, the content presented to the listener, the grammatical complexity of the linguistic stimulus, and the rate at which the story is presented (Gazella & Stockman, 2003). Story retelling also minimizes the degree to which prior knowledge and experience may interfere with the oral language sample. Story retelling was the method used to collect narrative language samples in the current study.

Evaluation

As the review of the narrative discourse research for SEB children indicated, there were a variety of ways to evaluate narrative growth. SEB children's narratives were evaluated in much of the same way as monolingual English children's narratives. There were two ways in which narratives were evaluated in these studies that influenced how narratives were evaluated in the current study to detect incremental changes in narrative development.

The research demonstrated that SEB child narratives could be analyzed to detect development in narrative skill. One way narratives were evaluated was to analyze narratives for story grammar elements, specifically using an episodic structure. Another

way was to categorize those elements into a story structure level (Hughes et al., 1997). A story structure refers to the ability to combine story grammar elements in a narrative. Each narrative is assigned a story structure level depending on the types of story grammar elements used in the narrative. Both of these will be discussed.

Researchers have proposed several story grammar elements to describe the story structure, however, most frameworks include *setting, initiating event, internal response, actions, and consequence* (Merritt & Liles, 1987; Stein & Glenn, 1979*;* Stevens, Van Meter, & Warcholak, 2010; Westerveld & Gillon, 2008). Many scholars agree that the *episode* is the most basic and essential unit of a story and consists of a *goal* (*complication* or *initiating event*), *attempt (action*) to achieve the goal and an *outcome* (*consequence*; Le et al., 2011; Peterson & McCabe, 1983; Schneider & Vis Dubé, 2005; Trabasso & Nickels, 1992). It has also been noted that children with language impairments produce stories with fewer episodes (Merritt & Liles, 1987; Wright & Newhoff, 2001) that are judged to be poorer in quality (Fey, Catts, Proctor-Williams, Tomblin, & Zhang, 2004; McFadden & Gillam, 1996).

The story structure level framework can be described as a continuum of narrative skills. At the beginning of the continuum, children produce narratives that include descriptions of characters, surroundings, or habitual actions with no causal relations. In preschool, children typically tell a narrative in the form of a *descriptive sequence* and then move toward an *action sequence*, which is temporally related but does not have causal relations (Glenn & Stein, 1980; Hedberg & Westby; 1993; Liles, 1987; Peterson & McCabe, 1983). Preschoolers further hone their narratives to include a causal relation

(*reaction sequence*) then include a goal-directed behavior (*abbreviated episode*; Paul, 2007).

In the middle of the continuum, children's narratives include the development of an episode, which may include some of the three elements of an episode (initiating event, attempt, consequence). When children are able to include a plan or an intentional behavior around 7 to 8 years of age, children tell what is called a *complete episode* and narratives include the elements of an episode (containing an initiating event, action, and consequence) and may include goals, internal motivations, and reactions (Estigarribia et al., 2011; Price et al., 2006; Scott et al., 1995; Soodla & Kikas, 2010. Monolingual English speakers may begin telling true narratives at ages 5 to 7 years and continue developing more complex narratives (multiple, complex, embedded episodes, and interactive) until age 13 (Hughes et al., 1997; Paul, 2007).

Near the end of the continuum, once children are able to produce a true narrative (abbreviated episodes to complete episodes), they may begin to tell more complex narratives around 9 to 11 years of age. The first type of complex narrative children tell is called a *complex episode* and includes elaboration of a complete episode with elaboration (multiple plans, attempts, or consequences) and may include an obstacle (Hughes et al., 1997; Paul, 2007). The second type of complex narrative is a *complex episode*, which contains obstacles within the episode that complicate the main character's ability to carry out the plan in the story. The third type of complex narrative is an *embedded episode* when one episode occurs within another episode. For example, a child might tell a story about his or her dog looking for a bone and also tell about how the dog ate the child's stuffed animal (Glenn & Stein, 1980; Hedberg & Westby, 1993; Liles, 1987; Peterson &

McCabe, 1983; Westby, 1992). At age 13, children tell the last type of complex narrative called an *interactive episode* when the child tells the story from two different perspectives (Paul, 2007). An interactive episode is final level at the other end of the continuum and is the most complex episode structure.

In summary, the task of retelling narratives has been popular to evaluate narrative development because it has demonstrated academic predictive abilities. Furthermore, narratives have been evaluated in a variety of ways, but a common way is to examine narratives for story grammar elements. The current study calculated the number of story grammar elements that were retold in the narrative as one measure. In contrast to using the story structure levels used in previous studies to measure development in narratives, the current study evaluated child narratives for the ability to impose a structure on the story grammar elements recalled using an episodic structure with and without details as another measure.

Summary

Comprehending and producing oral language narratives in school is a foundational skill to literacy development. Because narratives require the use of complex language skills, they have accurately predicted future academic success in children. Narrative skill is also important for young SEB children who are developing their academic and literacy knowledge in both languages, especially since telling narratives is culturally sensitive. A limited amount of research has been conducted with SEB children examining narrative as a target. Having children re-tell narratives is a well-accepted elicitation protocol to evaluate narrative development. A majority of researchers measure

narratives using story grammar elements. Most of the studies have used one to two assessment points while evaluating narratives, which do not provide a sizeable insight into developmental patterns of SEB children. Results from the literature suggested inconsistencies on whether spontaneous or re-telling tasks elicited the best narratives and whether eliciting narratives in English or Spanish yielded the longest or most complex narratives. The literature indicated that the ability for SEB children to produce narratives is developmental in nature.

Purpose and Research Questions

Although there have been studies examining the narrative development of SEBs, there is a dearth of research on the narrative development of SEB's over time. The current study was designed to examine (1) how often SEB children used certain story grammar elements in their narrative retells and (2) their ability to impose a classic narrative structure (episode) on their retells using these elements. Participants were 189 SEBs who were asked to retell stories at six time points over the course of a 3-year period from kindergarten through second grade when narratives are thought to be developing. The findings from this longitudinal study that incorporated a *polychronic* assessment approach have significant potential to forward our knowledge about English narrative development for young SEB children.

The purpose of this study was to examine the longitudinal macrostructure growth patterns (initiating event, action, obstacle, and consequence elements) of English fictional narratives retold by one hundred eighty-nine Spanish-English Bilingual (SEB) children who matriculated from kindergarten through the end of second grade. Children's

narrative retells were measured at six different time points biannually (in fall and spring of each school year).

The following research questions were addressed:

1. Is there a distinct trajectory of growth (linearity, direction, continuity) in English narrative macrostructure as measured by Proportion of Story Grammar Elements and Episodic Complexity Indices?
2. Do males and females earn different scores on narrative macrostructure as measured by Proportion of Story Grammar Elements and Episodic Complexity Indices across the six time points during kindergarten through second grade?
3. Do SEB children earn different scores on narrative macrostructure as measured by Proportion of Story Grammar Elements and Episodic Complexity Indices across the six assessment periods during kindergarten through second grade?
4. Do SEB children with low, average, or high language proficiency earn different narrative macrostructure scores measured with Proportion of Story Grammar Elements and Episodic Complexity Indices?
5. Do differences in means on narrative macrostructure measured with Proportion of Story Grammar Elements and Episodic Complexity Indices between low-, average-, and high-language proficiency groups vary as a function of time?

CHAPTER III

METHODOLOGY

Parent Study

Secondary data for this study were collected as part of the Biological and Behavioral Variation in the Language Development of Spanish-Speaking Children (BBVLDSC) study [R305U01001] (Francis et al., 2005), awarded by the U.S. Department of Education's Development of English Literacy in Spanish-Speaking Children Research Program and the Institute of Education Sciences in 2002. This multi-level study was designed to identify factors and conditions that contribute to the development of language and literacy skills of Spanish-speaking children learning English. The BBVLDSC project collected both cross-sectional and longitudinal data over a five-year period.

Parent Study Sampling Procedure

The sampling procedure strategy for the parent study was to represent educational experiences for the majority of Spanish-speaking children in the United States. Inclusion criteria for the parent study selected schools where (a) at least 40% of the school population was Latino, (b) at least 30% of the kindergarten students were considered to be limited in English proficiency, (c) students were performing adequately on state assessments to ensure schools were not seriously lacking good instruction, and (d) implementing programs for English learners (e.g., Structured English immersion, Early and Late Transitional Bilingual Education, and Dual-Language and Maintenance Programs; Branum-Martin, Foorman, Francis, & Mehta, 2010; Francis et al., 2005;

Vaughn, Mathes, Linan-Thompson, & Francis, 2005).

Parent Study Participants

There were 1,723 kindergarten students in the beginning of the longitudinal project in 2002 that were enrolled in 40 schools and 93 classrooms in California and Texas (Francis et al., 2005; Miller et al., 2006; Rojas & Iglesias, 2013). Specifically, participants were located in urban California (Long Beach area), urban Texas (Austin and Houston), and in border Texas (Brownsville). There were a total of 40 schools (Urban TX= 12, Border TX=11, Urban CA=17), 93 classrooms (Urban TX=27, Border TX=24, Urban CA=42), and 1451 children (Urban TX=501, Border TX=468, Urban CA=482) in the study. Children were enrolled in classrooms with four types of language instruction models: transition, dual language, immersion, and maintenance. Due to school-based variability in the ratio of instructional languages and the reality that most early grade instructional programs are represented into two categories, immersion and non-immersion, the researchers dissolved the four original categories into two groups: structured immersion English and transitional bilingual instructional language programs.

The children displayed a variety of cognitive and linguistic skills as children were identified as being typically developing, at-risk, or struggling (Francis et al., 2005). The children came from predominately Hispanic neighborhoods that varied in urban and rural settings and their primary language was Spanish (Branum-Martin et al., 2010; Francis et al, 2005). All children attended schools that varied in size in regards to student population (large and small districts) and the amount of students who received free- or reduced-lunch programs (average was 89%).

Parent Study Procedures

The parent study included the following five projects: (1) Measurement, (2) Skill Development, (3) Classroom Language and Instruction, (4) Family, Community, and School Projects, and (5) Intervention. The data for this study came from project two, a longitudinal study that examined the development of English and Spanish oral and literacy skills from kindergarten through the third grade.

During the second project, narrative language samples were obtained using wordless picture books by Mercer Mayer. Four *Frog* books were used to elicit narrative samples from participants: (a) *Frog, Where Are You?* (Mayer, 1969); (b) *Frog Goes to Dinner* (Mayer, 1974)*;* (c) *Frog on His Own* (Mayer, 1973)*;* and (d) *One Frog Too Many* (Mayer & Mayer, 1975). These *Frog* stories were selected because they have been demonstrated as a valid way for eliciting narratives of children from various linguistic and cultural backgrounds (Özçaliskan & Slobin, 1999; Papafragou, Massey, & Gleitman, 2002; Pavlenko, 2009) and also in children who are Spanish speakers or SEBs (Heilmann, Miller, Nockerts, & Dunaway, 2010; Sebastián & Slobin, 1994; Simon-Cereijido & Gutiérrez-Clellen, 2009).

During the narrative elicitation task, the examiner and child sat across from each other to reduce pointing and increase language output. The examiner presented the story orally while the child viewed the book. Following the model, the examiner gave the book to the child and asked the child to retell the story using English. The examiner was allowed only to provide backchannel responses (e.g., "Aha," "Si," "Tell me more") or to restate the last utterance. Children first heard stories in Spanish, their presumed stronger language to increase task familiarity for the child. The child was tested one week later in

English using the same book. Directions were first given in English and were provided in Spanish if the child was unable to complete the sample item in English.

The narrative discourse retells were orthographically transcribed using Systematic Analysis of Language Transcription (SALT; Miller & Iglesias, 2003-2004) software. Narrative language samples were recorded digitally and transcribed orthographically by two teams of trained graduate students using the conventions from SALT. Each transcriber received 10 hours of training with the lab manager to ensure transcription conventions across languages would be consistent as possible. Spanish utterances were segmented into Modified Communication Units (MC-units), originally proposed by Gutiérrez-Clellen and Hofstetter (1994) to accommodate for the PRO-Drop nature of Spanish. PRO-Drop refers to how Spanish speakers use pronouns. Spanish subject pronouns are typically omitted because they can be inferred from the verb conjugation. For example, "he walks" is conjugated as "camina" where the subject pronoun "he" is omitted because it is included in the verb conjugation from the infinitive verb "caminar" (to walk) to "camin*a"* (he walks). Use of the pronoun "he" in "he walks" (él camina) in Spanish is not obligatory. English transcripts were also segmented using MC-units to maintain consistency across measures in both languages even though English is not a PRO-Drop language.

Parent Study Reliability

Forty (20 English, 20 Spanish) language sample transcripts were randomly selected for transcription and coding reliability at three levels; use of transcription conventions, accuracy of basic conventions, and accuracy of narrative coding. An independent transcriber calculated reliability for protocol accuracy (how well SALT

transcriptions were followed) in English ranging from 98% to 100%. Then, independent transcriptions of the forty language samples were measured for transcription accuracy for words, morphemes, and utterance segmentation resulting in a 90 to 98% inter-rater reliability.

Current Study

Participants

A subsample of participants was drawn from the 1,723 participants in the BBVLDSC longitudinal project. There were 205 participants that met the following inclusionary criteria: (a) produced narrative stories at all six time points and (b) children told both English and Spanish stories at each of the six time points (indicating non-transience), and (c) each child had no missing data. Upon further examination of the data, one participant did not have date of birth on any of the transcripts. There were an additional five participants whose sequence of stories did not align with the rest of the participants. Keeping these participants in the study would make it difficult to compare performance across participants.

The remaining 199 participants were matched on the type of instruction provided [i.e. structured English immersion (in CA) or transitional bilingual (in TX)]. Each participant was assigned a "1" if they attended a school in California and a "2" for a school in Texas. The number of "1" and "2" were totaled separately with 104 participants from California and 95 from Texas. Nine participants from California were randomly selected using SPSS *random sample of cases* and were removed from the participant pool. The final participant number was 190. During scoring, it was discovered that one

participant's transcript was blank at one time point and was excluded from the study. Therefore, the study included 189 participants.

All participants were Hispanic and spoke Spanish as their home language. There were 84 males and 105 females who ranged in age from 4.95 to 6.78 years of age (average age = 5.6 years old) at the outset of the study when enrolled in kindergarten. There were 95 children who received structured immersion English (California) and 94 children who received transitional bilingual instruction (Texas). See Table 12 for a description of the story used for elicitation at each semester, number of participants at each semester, and the average age of participants at each time point.

Treatment of Time

In polychromic studies, time is a time-dependent variable (Bickel, 2007). In attempt to control for confounding factors related to this issue, a time metric was computed in the current study for each assessment point in a three-step process. The narrative retells from these participants were obtained in the fall and spring of each academic year from kindergarten through the end of second grade for a total of six time points: (1) fall of kindergarten, (2) spring of kindergarten, (3) fall of first grade, (4) spring of first grade, (5) fall of second grade, and (6) spring of second grade. Each of these time points or assessment periods was referred to as a Wave. Due to the large number of participants in the parent study, all participants were not assessed on the same day, but within 2 or 4 months apart within the same Wave.

The first step was to determine a starting time point to base the time metric. Because the assessment times during each wave varied from two to four months in the fall of kindergarten, the month of the earliest assessment date was used as a starting point

(August). Scatterplots of fall and spring assessments of participants that visually show the range of assessment times are shown in Figures 1 through 3 in Appendix B (fall) and in Figures 1 through 3 in Appendix C (spring).

The second step was to assign an equivalent amount of time to each month in regards to the amount of the academic year completed from August of kindergarten (the first assessment month). Each month was computed as 1/12 (= .08) and was rounded to the nearest hundredth. See Table 1 for the equivalent of month per academic year completed and the computed ratio.

The third step was to calculate an average assessment time to represent the time that a majority of the students were tested at each assessment point. The average time of assessment in the fall was October (.17) and in the spring was May (.75) and can be seen in Table 2. The average time metric for each Wave was used during statistical analyses.

As discussed, the average times were based on the portion of the academic year completed from the initial time of assessment. That time was in the fall of kindergarten (August) and was assigned an average time of "0.00" and the last assessment was in August of second grade and was assigned an average time of "3.00". Kindergarten was year one of the study and average times were assigned between ".00 – 1.00". First grade was year two of the study and was assigned average times between "1.00 - 2.00". Second grade was year 3 of the study and was assigned average times between "2.00 - 3.00". For example, participants were assessed over two months in Wave 1 (i.e., September and October) and over three months in Wave 2 (i.e., April, May, and June. Participants assessed in October of each year were assigned "0.17" (kindergarten), "1.17" (first

grade), and "2.17" (second grade). See Table 3 for the equivalent of month per academic year completed and the computed ratio for the entire longitudinal study.

Table 1
Time in Ratio per Month

Ratio of Year Completed	Computed Time Ratio
0/12	.00
1/12	.08
2/12	.17
3/12	.25
4/12	.33
5/12	.42
6/12	.50
7/12	.58
8/12	.67
9/12	.75
10/12	.83
11/12	.92
12/12	1.0

Note. Ratio of school year completed with August equaling 0/12 or a ratio of .00. Ratio is incremental by month and year.

Table 2
Average Assessment Time for Each Wave

Wave	Season	Grade	Average Time
1	Fall	Kindergarten	.18
2	Spring	Kindergarten	.75
3	Fall	1st Grade	1.18
4	Spring	1st Grade	1.75
5	Fall	2nd Grade	2.18
6	Spring	2nd Grade	2.75

Note. Wave 1 = Fall of Kindergarten; Wave 2 = Spring of Kindergarten; Wave 3 = Fall of 1st grade; Wave 4 = Spring of 1st grade; Wave 5 = Fall of 2nd grade; Wave 6 = Spring of 2nd grade; Average time = the ratio of the average time of the school year completed when assessed with August = .00 for the first month of the first year and 3.00 = August of year three (end of 2nd grade).

Dependent Variables

A rubric was developed to analyze narrative macrostructure from the *Frog* stories retold by children in the current study. The rubric yielded two dependent variable scores that were loosely based on the observations of Nicolopoulou (1997) who found that young boys and girls as early as 4 years old will use story grammar elements differently when telling stories. In fact, she determined the same element may have different significance, may be used differently, or may be categorized into different structures of meaning. Nicolopoulou highly recommended that elements be interpreted as part of a larger context rather than in isolation. With this in mind, the rubric yielded two dependent variable scores, the *Proportion of Story Grammar Elements (PSGE) Index* and *Episodic Complexity (EC) Index* to examine elements in isolation and as part of a

Table 3

Ratio of Academic Year Completed for Study

Months of Year Completed	Calendar Month of Study	Month	Time YI K	Time Y2 1st grade	Time Y3 2nd grade
0	8	August	.00	1.00	2.00
1	9	September	.08	1.08	2.08
2	10	October	.17	1.17	2.17
3	11	November	.25	1.25	2.25
4	12	December	.33	1.33	2.33
5	1	January	.42	1.42	2.42
6	2	February	.50	1.50	2.50
7	3	March	.58	1.58	2.58
8	4	April	.67	1.67	2.67
9	5	May	.75	1.75	2.75
10	6	June	.83	1.83	2.83
11	7	July	.92	1.92	2.92

Note. Months of school year completed in relation to assessment times. August was the first month of assessments and equals 0/12 or a ratio of .00. The months of assessment are calculated for a total of three years from Kindergarten (year 1) through the end of 2nd grade (year 3).

larger context. A total of six PSGE and EC Indices obtained over the course of the study, one for each of the six assessment periods.

Rubric Development

Similar to previous research that has examined narrative growth (Muñoz et al., 2003), outcome measures for this study included knowledge of story grammar elements and episode structure. The rubrics developed for this study were designed specifically for use with the *Frog* story scripts available at www.saltsoftware.com (Resources > Elicitation, Transcription, & Coding Aids > Frog Story Scripts and Audios). Four *Frog* books were used in this study: (a) *Frog, Where are You? (Mayer, 1969);* (b) *Frog Goes to Dinner* (Mayer, 1974)*;* (c) *Frog on His Own* (Mayer, 1973)*;* and (d) *One Frog Too Many* (Mayer & Mayer, 1975). A detailed description of the seven-step rubric development process is in Appendix D. In summary, each *Frog* story was analyzed for the presence of episodes, assigned story grammar elements to fit into an episodic structure from a pre-determined model, and coded for two dependent variables (Proportion of Story Grammar Elements and Episodic Complexity Indices). The Frog Stories are not equivalent in terms of the number of story elements or embedded episodes that they contain. Therefore, customized rubrics were designed for each of the four *Frog* stories.

Story elements that were coded included initiating event, action, obstacle and consequence and made up the PSGC Index. Episodes contained a minimum of one initiating event, an action, and a consequence and made up the EC Index. An *initiating event* (IE) referred to the event that motivated the character into action, and was the

starting point for the episode. The *action* (A) referred to the attempts that characters took in relation to the initiating event. One subcategory related to action was called the *obstacle* (O) and referred to an event that interfered with the action the character was trying to take. The basic episode may or may not have included an obstacle. The *consequence* (C) referred to the presence of a solution or ending related to the initiating event.

Episodes were designated as either primary or secondary. A primary episode referred to the book's overarching episode. In the book *One Frog Too Many*, the primary episode was pre-determined to contain the following story elements: A boy opened a box to learn that he had been given a new little frog (IE), the big frog did mean things to the little frog (A), and the big frog decided to be nice to the little frog (C). Secondary episodes were used to analyze narrative growth in the current study.

A secondary episode referred to the episodes that were embedded within the primary episode. An example of a pre-determined secondary episode from *One Frog Too Many* was: *"So he opened the box and was very excited when he saw what was in it. Inside the box was a little frog (IE). The boy, the dog, and the turtle liked the little frog. But the big frog didn't like the little frog. The boy set the little frog down next to his pets (A) and said, "This is my new little frog." The big frog said, "I don't like you." (C).* Each *Frog* story varied in the number of secondary episodes and story elements they contained. An example of a *Frog* story rubric with primary and secondary episodes is shown in Appendix E. The total number of secondary episodes in each of the four *Frog* stories ranged from 7 to 9 and is shown in Table 4.

Scoring Procedures

The model *Frog* stories contained a series of secondary or *embedded* episodes (one episode within another) that made up the primary episode. The stories were coded for two indices based on the story grammar elements and episodes contained in the stories and served as dependent variables for narrative outcomes (PSGE and EC Indices). A scoring procedure guide was developed for each *Frog* story to aid in determining acceptable responses for each of the story grammar elements. An example of a *Frog* story rubric scoring procedure is provided in Appendix F.

PSGE Index. The Proportion of Story Grammar Elements Index scoring procedure was designed to award points when participants recalled story elements that matched those provided in the model regardless of whether they were reported in sequential order in the episode. For example, if the child recalled, "the big frog kicked the little frog", he or she was awarded one point for action (A) regardless of when it was reported. Each element recalled was tallied to make up a proportion of story grammar elements index score. The total number of story elements recalled was divided by the total possible for that particular *Frog* story and yielded a ratio score. For example, if there were a total possible of 23 elements students might recall, and 12 were reported, the PSGE for that story was 12/23 = .52. The total number of possible points for the PSGE Index for each of the four *Frog* stories ranged from 24 to 32 and is shown in Table 4.

EC Index. The Episodic Complexity Index was calculated by adding the number of secondary episodes children recalled that matched the model episodes. Secondary episodes might be *complete, complex* or incomplete. A *complete* episode included initiating event, action, and consequence and was awarded 3 points.

A *complex* episode referred to recall of an episode plus any additional elements used in the model. For example, there were many secondary episodes that contained only an IE, A and C, but other actions as well. In these instances, children were awarded a score of 3 for recalling the basic episode plus 1 point for every additional story element they recalled within the episode.

It was possible that children may not recall all of the story elements necessary to form a complete episode. *Incomplete* episodes were coded when children did not recall the episode at all or provided only one or two of the story elements contained in the basic episode. An incomplete episode was awarded a score of 0 when calculating EC Index.

The complete and complex subtotals were added together and divided by the potential episodic complexity points possible for that particular *Frog* story yielding a ratio score. The *Frog* stories ranged from having 2 to 5 complete episodes and 3 to 5 complex episodes. For example, a complete episodic subtotal of 9 would be added to a complex episodic subtotal of 1 for an episodic complexity total score of 10. The EC total was divided by the total number of points possible for the specific Frog story and yielded an EC Index ratio, 10/24 = .42 (24). The total number of possible points for the complete episode subtotal, complex episode subtotal, and the EC Index for each of the four *Frog* stories is shown in Table 4.

Rubric Reliability. Narratives from two previously collected and separate sets of data comprised of SEBs were used to create and adjust rubrics. Participants in these studies told narratives that were elicited using the same *Frog* stories as the current study, namely: *Frog, Where are You?* (Mayer, 1969), *Frog Goes to Dinner* (Mayer, 1974), *Frog on His Own* (Mayer, 1973), and *One Frog Too Many* (Mayer & Mayer, 1975). Two

raters calculated inter-rater reliability by identifying the primary and secondary episodes contained in each story. The raters met and discussed their decisions. Disagreements were resolved through discussion and consultation. The rubric's primary and secondary episodes from the *Frog* stories were combined to calculate an inter-rater reliability at 90%.

Analysis of Frog Stories

A one-sample chi-square test was conducted to compare observed and expected frequencies on each of the four *Frog* stories from Table 4 to determine if the different possible total points (i.e., 26, 29, 32, 24) for the two dependent variables (proportion of story grammar elements index and episodic complexity index) were significantly different.

Table 4

Proportion of Story Grammar Elements Index and Episodic Complexity Index for Frog Stories

	FGTD	FOHO	FWAY	OFTM
Number of Secondary Episodes	7	7	9	7
Proportion of Story Grammar Elements Index (PSGE Index) Possible Total	26	29	32	24
Episodic Complexity Index (EC Index) Total Possible:	26	29	32	24
Subtotal of Complete Episodes Possible	21	21	27	21
Subtotal of Complex Episodes Possible	5	8	5	3

Note. This table displays the potential number of secondary episodes, potential Macrostructure Complexity Score, Total Macrostructure Quality score as a composite of total complete episodes and total complex episodes per frog story. *Frog* stories are represented as FGTD = *Frog Goes to Dinner;* FOHO = *Frog on His Own*; FWAY = *Frog, Where Are You?* OFTM = *One Frog Too Many.*

The results of the test were not significant $x^2(3, N = 4) = .00, p = 1.00$ indicating the possible totals were not significantly different between each of the *Frog* stories. Therefore, the *Frog* stories were deemed equivalent in evaluating both dependent variables.

Independent Variables

Initial English Language Proficiency / Number of Different Words

Initial English language proficiency was measured using the number of different words (NDW) in English and was calculated at Wave 1 (fall of kindergarten and served as a proxy for English language proficiency (See Table 12). Spanish NDW was also obtained and presented in Table 12. These data were not used in the analyses but obtained for descriptive purposes. English language proficiency was categorized as low, average, or high based on data from the SALT *Bilingual English Story Retell* database.

The SALT Research 2012 (Miller, J., & Iglesias, A., 2012) *Bilingual English Story Retell* database included 617 students (349 females and 268 males) who were approximately 5.74 years of age who retold *Frog, Where Are You?* This specific database was selected because the ages of the children in the database closely matched the average ages of the students in the current study at Wave 1 (fall of kindergarten, 5.75). The average English NDW for children in the database was 59 with a standard deviation (SD) of 23. The average NDW English for children in the current study was 55 with a SD of 22 (See Appendix G for a histogram of NDW English in the fall of kindergarten). Children in the current study were classified as "low" by subtracting one SD and as "high" by adding one SD to the average. Children's initial English language

proficiency was judged to be Average if NDW fell between 33 and 77; Low if NDW fell below 33; and High if NDW was at or higher than 77.

The average Spanish NDW for children in the database was 63 with a SD of 21. The average Spanish NDW for children in the current study was 57 with a SD of 20 (See Appendix G for a histogram of NDW Spanish in the fall of kindergarten). Children's initial Spanish language proficiency was judged to be Average if NDW fell between 37 and 77; Low if NDW fell below 37; and High if NDW was at or higher than 77.

Groups were assigned a "1" for performance below one standard deviation below average, "2" for performance in the average range, or "3" for performance above one standard deviation from the average for English and Spanish language proficiency.

Gender and Summer Vacation

Gender. Research findings related to gender and language performance are mixed. Some research has shown that females outperform males (Bauer, Goldfield, & Reznick, 2002; Bornstein, Hahn, & Haynes, 2004; Bouchard, Trudeau, Sutton, Boudreault, & Deneault, 2009) and others have shown that males outperform females (Uchikoshi, 2006). Therefore, one of the research questions for this study asked whether gender impacted growth trajectories for SEB children. Gender, a time invariant predictor, was included as an independent variable and was represented as male or female. This variable was used in statistical analyses that related to growth over time.

Summer Vacation. Recent studies related to the effect of summer vacation, on language and literacy skills is varied. Some studies indicated that summer vacation negatively impacted academic growth (Alexander, Entwisle, & Olson, 2001; Allington & McGill-Franzen, 2013) and others demonstrated a positive effect of summer vacation

(Hammer, Lawrence, & Miccio, 2007). Therefore, one of the research questions for this study asked whether SEB children earn different scores on narrative macrostructure as measured by PSGE and EC Indices across the six assessment periods.

In order to examine the impact of summer vacation on narrative growth in the present study, a summer vacation performance score was calculated. Summer vacation, a time-varying predictor, was described as the gap between spring and fall semester and accounted for the potential effect of the time children did not attend school between the spring and fall semesters. The current study examined narrative growth over a period of three years. Within this time frame there were two times when children experienced summer vacation. Summer 1 was from spring of kindergarten to fall of first grade and Summer 2 was from spring of first grade to fall of second grade. Summer vacation performance was calculated by subtracting the performance during the spring from the following fall (e.g., fall of first grade – spring of kindergarten). Each participant earned two summer vacation scores.

Analysis Plan and Hypotheses

Research Question One

The average scores on PSGE and EC indices were computed to determine whether there was a distinct trajectory of development in English narrative macrostructure. The trajectories were examined for the presence of linearity, direction, and continuity of development.

Research Question One Hypotheses

It was hypothesized that the PSGE and EC Indices would increase with age. It

was possible that development in the use of individual elements as measured using the PSGE Index and EC Index may not be linear over time and would show periods of instability (i.e., nonmotonic and discontinuous). It was expected that the PSGE and EC Indices would develop in slightly different trajectories because while both were measures of narrative macrostructure, one depended more on memory of story elements (PSGE Index) and the other on skill in imposing a structure upon the story elements recalled (EC Index).

Research Question Two

The average scores on PSGE and EC indices were computed to ascertain the effects of gender on English narrative macrostructure development. The trajectories of males and females were compared for similarities and differences in linearity, direction, and continuity of development.

Research Question Two Hypotheses

Research has demonstrated mixed effects for gender and varies in regards to which gender outperforms the other on language tasks (Bauer et al., 2002; Bornstein et al., 2004; Bouchard et al., 2009; Uchikoshi, 2006). Therefore, it is hypothesized that gender will play a significant role in narrative macrostructure development. However, it is unclear which gender will outperform the other.

Research Question Three

The effect of time was computed from two separate two-way repeated measures analysis of variance (ANOVA). Time was within-subject variable and English Language Proficiency was the between-subjects variable. Results were interpreted to determine if

children earned different scores on the PSGE and EC Indices over time from kindergarten through the end of second grade. This question was posed to determine whether or not summer vacation affected narrative growth measured by the PSGE and EC Indices.

Research Question Three Hypotheses

It was hypothesized that over time, both PSGE and EC Indices would increase with age and that summer vacation would have a negative directional effect on both Indices. Narratives are a complex language skill and during the summer months most linguistic demands are at the conversational level. Therefore, without practice and in mostly Spanish speaking environments, it was not likely that English narratives skills would have received much attention over the summer months.

Research Question Four

The effect of initial English language proficiency group (Low, Average, High) was computed from two separate two-way repeated measures analysis of variance (ANOVA) with Time as within-subject variable and English Language Proficiency as the between-subjects variable. Results were interpreted to determine whether children with different initial English language proficiency levels at fall of kindergarten earned different scores on PSGE and EC Indices over time. This question had the potential to provide insight on the linearity, direction, and continuity of individual development for young SEB children with different English proficiency levels. It also might provide preliminary data to inform educators on the timing and need for providing additional instruction or services for students who might be falling behind or who might be at-risk for language and literacy difficulties.

Research Question Four Hypotheses

It was hypothesized that narrative macrostructure performance on PSGE and EC Indices would vary between participants and be distributed depending on initial English language proficiency level that was measured using NDW in the fall of kindergarten. It was expected that PSGE and EC Indices would be highly correlated. However, it was hypothesized that the PSGE Index and EC Index would be more highly correlated for children with higher initial English language proficiency than children with lower initial English language proficiency because their language skills would be more stable. Differences in initial language status have the potential to affect different growth trajectories between the groups. For example, in a study by Rojas and Iglesias (2013), results indicated that the initial status was negatively and systematically related to English number of different words, English mean length of utterance, and English words per minute for young SEB children.

Research Question Five

The differences on outcome measures between low-, average-, and high-language proficiency groups over time were computed from two separate two-way repeated measures analysis of variance (ANOVA). Time was the within-subject variable and English Language Proficiency was the between-subjects variable. Results may provide insight into different narrative language growth patterns between participants with differing English language proficiency skills.

Research Question Five Hypotheses

It was hypothesized that the different English language proficiency groups at the

outset of the study may result in diverse macrostructure development trajectories depending on the Index used (PSGE and EC Indices). It was likely that children who were categorized as having High initial language knowledge in English would demonstrate a more direct relationship between time and performance on the outcome measures because their language skills would be more stable. It was likely that children who were categorized as having Low initial language knowledge in English would demonstrate a development pattern with more increases and decreases than the High group because their language skills were unstable and would fluctuate over time.

It was also hypothesized that initial English language proficiency in kindergarten would be indicative of how much growth would be seen at the end of second grade. Evidence to support this hypothesis comes from a study conducted by Rice, Redmond, and Hoffman (2006), who examined mean length of utterance (MLU) and vocabulary in children with specific language impairment (SLI) and typically developing children to determine the growth trajectories. The typically developing children began with higher intellectual functioning on the Columbia Mental Maturity Scale, MLU in morphemes, MLU in words, developmental sentence scoring (DSS), and index of productive syntax (IPSyn). The children with SLI started with a larger raw vocabulary score (PPVT-R). Findings indicated that MLU and vocabulary for these two groups differed at onset and in the rates of growth. The typically developing children started the study with higher performance eon the MLU in morphemes measure. At the end of the five years, the SLI children caught up and minimally surpassed the typically developing children. For vocabulary, although the typically developing children had a lower average vocabulary

score, over five years they demonstrated a faster growth rate and outperformed the SLI children.

Inter-rater Reliability

Training

Prior to the study, training occurred for three different tasks using data from another project that used SEB participants and retold *Frog* stories: (1) scoring transcripts for story grammar elements, (2) transferring the information from the transcripts to the scoring rubrics and calculating PSGE and EC Indices, and (3) accuracy of data entry into the data spreadsheet. Training for scoring transcripts occurred for approximately 6 hours per *Frog* story totaling 24 hours. During training, *Frog* stories were scored together until each scorer earned 90% on 10 transcripts. Then, each scorer worked independently until 90% reliability was reached for 10 transcripts. Transcripts were scored independently until 20 transcripts were scored with 90% reliability. Training for transferring the information from the transcripts to the rubrics occurred for approximately 3 hours. During training, the elements from the *Frog* stories were transferred from the transcripts to the rubrics and additional calculations were scored together until each scorer earned 90% on 10 transcripts. Then, each scorer worked independently until 90% reliability was reached for 10 transcripts. Each scorer worked independently until 20 transcripts were scored with 90% reliability. Training for entering the data occurred for approximately 2 hours. During training, each scorer transferred scores from the rubrics to the spreadsheet independently for 20 participants. Inter-rater reliability was calculated at 99% and was deemed acceptable for entering data from the current study into the spreadsheet.

Inter-rater Reliability for Current Study

Twenty percent (38 participants, 19 from CA, 19 from TX) of the participants' language samples from the current study were randomly selected for calculating reliability on three tasks: (1) scoring transcripts for story grammar elements, (2) transferring the information from the transcripts to the scoring rubrics, and (3) calculating PSGE and EC Indices, and accuracy of data entry into the data spreadsheet. Random selection of participants was generated using SPSS *random sample of cases*. Each participant's narratives from the six waves were selected for inter-rater reliability. Two methods of inter-rater reliability were conducted: point-by-point (PBP) and *kappa*. A PBP inter-rater reliability of 90% or above was deemed acceptable. A *kappa* of .6 or better was deemed good.

An independent research assistant scored 20% of the transcripts for story grammar elements ranged from 91% to 97% PBP accuracy with an average of 94%. *Kappa* scores ranged from .69 to .84 with an average of .78. An independent research assistant transferred the information from the transcripts to the scoring rubrics and calculated PSGE and EC Indices with a reliability ranging from 95% to 100% BPB accuracy with an average of 98%. *Kappa* scores ranged from .92 to 1.00 with an average of .94. An independent research assistant entered the scores from the rubrics into the data spreadsheet with a range of 99% to 100% PBP accuracy and an average of 100%. *Kappa* scores ranged from .99 to 1.00 with an average of 1.0. See Table 5 for specific inter-reliability accuracy for each wave.

Blinding for Current Study

Scorers were blinded to the time of each *Frog* story. An independent research assistant renamed each *Frog* story with the story's title (i.e., FWAY, FOHO, OFTM, FGTD) and a number. The scorers did not have access to the master list identifying each of these names with the actual wave each *Frog* story was administered. In fact, scorers wrote the new title on the rubrics to identify the waves. The data enterer was also blind to time of each *Frog* story. The new titles were listed in the spreadsheet when the data was entered.

Table 5

Transcript Inter-Rater Reliability Results

	K Fall FWAY	K Spring FGTD	1st Fall FOHO	1st Spring OFTM	2nd Fall FWAY	2nd Spring FGTD	All Waves
Transcript:							
PBP*	91%	91%	94%	94%	95%	97%	94%
Kappa	.69	.71	.75	.79	.83	.84	.78
Rubric:							
PBP*	98%	100%	96%	95%	99%	100%	98%
Kappa	.93	1.00	.92	.93	.92	.92	.94
Spreadsheet:							
PBP*	100%	99%	99%	100%	100%	100%	100%
Kappa	1.00	.99	.99	1.00	1.00	1.00	1.00

Note. PBP* = Point-by-point inter-rater percent of agreement reliability was calculated by counting if each item scored by independent raters was the same or different. Total of same was divided by total number of items and multiplied by 100 to represent reliability as a percentage; Point-by-point benchmark: 90% or above is excellent; *Kappa* = Cohen's *Kappa* inter-rater reliability statistic; Cohen's *Kappa* benchmark: .40 = poor agreement beyond chance, .40 to .75 = fair to good agreement beyond chance, and .75 an above = excellent agreement beyond chance (Banerjee et al., 1999).

Data Analysis for Current Study

Power and Effect Size

A statistical power analysis was performed for minimal detectable effect based on current data ($N = 204$). Effect size benchmarks for repeated measures ANOVA - f test are as follows: small = .1, medium = .25, and large =.04 (Laerd 2013). A minimal detectable effect size was calculated using GPower 3.1 with a two-tailed alpha = .05, power = 0.80, and sample size = 204 for the simplest within group comparison. The minimal detectable effect was extremely small (.07), thus, our sample size of $N = 204$ was more than adequate for the main objective of this study (research question one). Sample sizes from 50 to 204 and their respective minimal detectable effects are in Table 6.

Table 6

Sample Sizes and Minimal Detectable Effects

	$N = 50$	$N = 100$	$N = 150$	$N = 204$
Effect size *f*	0.15	0.10	0.08	0.07
Power	0.8	0.8	0.8	0.8
Number of groups	2	2	2	2
Number of Measurements	6	6	6	6
Correlation among repeated measures	.5	.5	.5	.5

Note. Minimal detectable effect size calculated for research question one with sample sizes for 50, 100, 150, and 204 participants. Effect size for *F* test ANOVA repeated measures, within-between interaction. Effect size benchmarks for ANOVA- *F* are small = 0.1, medium = 0.25, and large = 0.4.

Repeated Measures ANOVA Assumptions

Prior to conducting a repeated measures ANOVA analysis, the data were evaluated to ensure they met the assumptions for repeated measures ANOVA (IDRE, 2013). The following assumptions were evaluated: (1) dependent variables are measured at the interval or ratio level (continuous), (2) independent variables consist of at least two categorical or matched groups, (3) no significant outliers, (4) distribution in the dependent variable between two or more related groups should be normally distributed, and (5) the variances of the differences between all combinations of related groups must be equal (sphericity, the repeated measures equivalent of homogeneity of variances).

Assumption 1 refers to the two dependent variables that were measured: *Proportion of Story Grammar Elements Index* and *Episodic Complexity Index*, which were continuous variables. Assumption 2 refers to the within-subjects factor of time and of initial English language proficiency level. Assumption 4 used a *Shapiro-Wilk* analysis to test for normality. Assumption 5 used the *Mauchly's Test of Sphericity* in SPSS to test for sphericity during the repeated measures ANOVA analysis. If this assumption was violated, then the *Greenhouse-Geisser* correction was used to interpret the analysis.

Testing for Normality. Normality testing refers to the process of determining if the data follow a normal distribution. Testing for normality can be conducted statistically and graphically. Statistically, a Shapiro-Wilk test can be conducted. If the results from this test are significant with a p-value $<.05$, then the data does not follow a normal distribution. At that time, transformation of the variable will be attempted to see if it creates a more normal distribution. If transformation does not improve the normality of the distribution, than the original variable will be used in the analysis. Graphically, an

informal approach to test normality is to compare a histogram to a normal probability curve. A more formal graphical analysis is creating a quantile-quantile plot of the standardized data against a normal distribution. See Table 7 for Shaprio-Wilk results of normality testing. Results from the Shapiro Wilk and the Normal Q-Q Plots indicated that both indices did not exhibit a normal distribution, therefore, transformations were performed. See Appendices I and J for PSGE Index and EC Index Normal Q-Q plots.

Transformation of Variables. PSGE Index and EC Index variables were transformed to determine if the transformed variable distribution became normal by using any of the following transformations: natural log, log 10, square root, square, and cube. Variables were transformed using SPSS. Results from the PSGE Index Shapiro-Wilk normality test revealed that all transformations were significant indicating a non-normal distribution. Therefore, the original PSGE Index variable was used the repeated measures ANOVA analysis. See Table 7 and 8 for Shaprio-Wilk normality results for transformed variables. Graphical representations of normality (Normal Q-Q Plots) for each dependent variable can be seen in Appendix H. Results from the EC Index Shapiro Wilk normality test revealed that all transformations were significant indicating the transformations also had a non-normal distribution. Therefore, the original EC Index variable was used in the repeated measures ANOVA analysis. Graphical representations of normality (Normal Q-Q Plots) can be seen in Appendix I (PSGE Index) and Appendix J (EC Index).

Testing for Collinearity. Because the design of the study included repeated measures over time, it was likely that multilevel modeling (MLM) would be warranted. To determine if MLM is warranted, tests of collinearity need to confirm that the data on

Table 7

PSGE Index Shapiro-Wilk Results for Normality Testing with Transformations

	PSGE Index *p*-value	Natural Log *p*-value	Log 10 *p*-value	Square Root *p*-value	Squared *p*-value	Cubed *p*-value
Wave 1	.02	.00	.00	.00	.00	.00
Wave 2	.00	.00	.00	.00	.04	.00
Wave 3	.00	.00	.00	.00	.01	.00
Wave 4	.00	.00	.00	.00	.00	.00
Wave 5	.04	.00	.00	.01	.03	.00
Wave 6	.00	.00	.00	.00	.00	.00

Note. Wave 1 = fall of kindergarten; Wave 2 = spring of kindergarten; Wave 3 = fall of 1st grade; Wave 4 = spring of 1st grade; Wave 5 = fall of 2nd grade; Wave 6 = spring of 2nd grade.

Table 8

EC Index Shapiro-Wilk Results for Normality Testing with Transformations

	EC Index *p*-value	Natural Log	Log 10	Square Root	Squared	Cubed
Wave 1	.00	.00	.00	.00	.00	.00
Wave 2	.00	.00	.00	.00	.00	.00
Wave 3	.02	.00	.00	.00	.00	.00
Wave 4	.00	.00	.00	.00	.00	.00
Wave 5	.01	.00	.00	.00	.00	.00
Wave 6	.02	.00	.00	.00	.00	.00

Note. Wave 1 = fall of kindergarten; Wave 2 = spring of kindergarten; Wave 3 = fall of 1st grade; Wave 4 = spring of 1st grade; Wave 5 = fall of 2nd grade; Wave 6 = spring of 2nd grade.

the dependent variables (PSGE and EC Indices) are highly correlated across waves. There were two ways to test for collinearity. The first one was using a random intercepts only model to calculate the intraclass correlation (Bickel, 2007). Another way was to conduct a correlational analysis for each dependent variable across the waves. Both analyses were conducted.

The first approach to test for collinearity was to estimate an unconditional means (UM) model using the R statistical package (R: A Language and Environment for Statistical Computing). The primary purpose of UM model is to determine whether MLM is warranted. It is the model used to evaluate the intraclass correlation (ICC) to substantiate the need for clustering the data. The ICC was calculated by estimating the UM model and dividing the intercept variance by the intercept variance plus the residual variance from the covariance parameter. The ICC represents the amount of variation that is associated with individual differences among participants. If an ICC yields a ratio of .25 (25%; Sheck & Ma, 2011) or higher, then clustering or nesting is appropriate and individual participants would be put in as a Level 2 clustering variable. UM also serves as baseline model for UG model comparison of proportional variance reduction. This model does not use time in the model and looks at initial status allowing intercepts to vary. Because intercepts were allowed to vary, a restricted estimated maximum likelihood (REML) was used.

The second approach to test for collinearity was to compute Pearson's correlations comparing performance across the waves for each dependent variable. Pearson's correlations were conducted for the PSGE Index comparing the performance on each PSGE Index performance across the waves to test for collinearity. Although the

results were significant, the correlations were weak across each wave indicating the lack of collinearity in the variable PSGE Index over the six waves. See Table 9.

Pearson's correlations were conducted for the EC Index comparing the performance on each PSGE Index performance across the waves to test for collinearity. Although the results were significant, the correlations were weak across each wave indicating the lack of collinearity in the variable EC Index over the six waves. See Table 10.

Results from both testing both the UM model and the correlation analysis indicated a lack of collinearity, therefore, MLM was not warranted. Consequently, a two-way repeated measures ANOVA was conducted to analyze narrative growth over time.

Table 9

Correlational Results for PSGE Index at Each Wave

	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6
Wave 1	1					
Wave 2	.58**	1				
Wave 3	.54**	.43**	1			
Wave 4	.20**	.33**	.36**	1		
Wave 5	.36**	.29**	.45**	.30**	1	
Wave 6	.24**	.19**	.26**	.17**	.36**	1

Note. Wave 1 = fall of kindergarten; Wave 2 = spring of kindergarten; Wave 3 = fall of 1st grade; Wave 4 = spring of 1st grade; Wave 5 = fall of 2nd grade; Wave 6 = spring of 2nd grade.

Modeling Growth Trajectories

When modeling growth trajectories, results are presented graphically. These illustrations of growth require specific terms to discuss the patterns of growth. Elman and colleagues (1997) devised a growth pattern taxonomy to describe the shape of child development change along three nested aspects of growth: *linearity* (linear vs. curvilinear), *direction* (monotonic vs. nonmonotonic) and *continuity* (continuous vs. discontinuous). This taxonomy has been used recently to describe the growth trajectories of young SEB children's language productivity development along with a visual representation of the three aspects of growth (Rojas & Iglesias, 2013).

Linearity refers to trends that are gradual, periodic, or steady. Curvilinear refers to trends that are instantaneous, exponential accelerations or decelerations. Direction refers to the growth in a positive or negative direction. Monotonic refers to trends that are

Table 10

Correlational Results for EC Index at Each Wave

	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6
Wave 1	1					
Wave 2	.39**	1				
Wave 3	.42**	.34**	1			
Wave 4	.20**	.25**	.25**	1		
Wave 5	.29**	.27**	.29**	.16**	1	
Wave 6	.22**	.18**	.24**	.23**	.31**	1

Note. Wave 1 = fall of kindergarten; Wave 2 = spring of kindergarten; Wave 3 = fall of 1st grade; Wave 4 = spring of 1st grade; Wave 5 = fall of 2nd grade; Wave 6 = spring of 2nd grade.

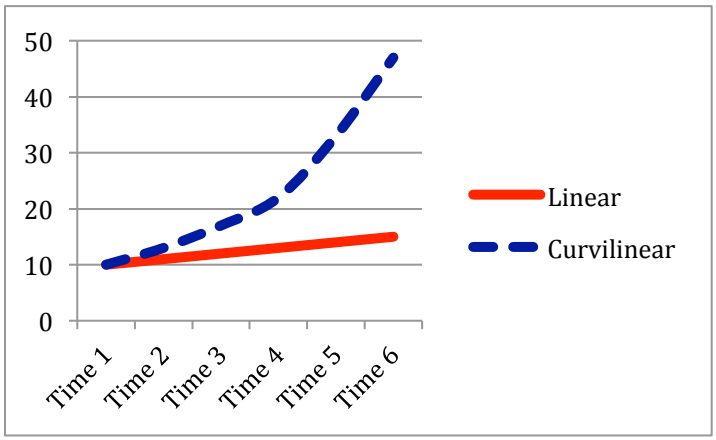
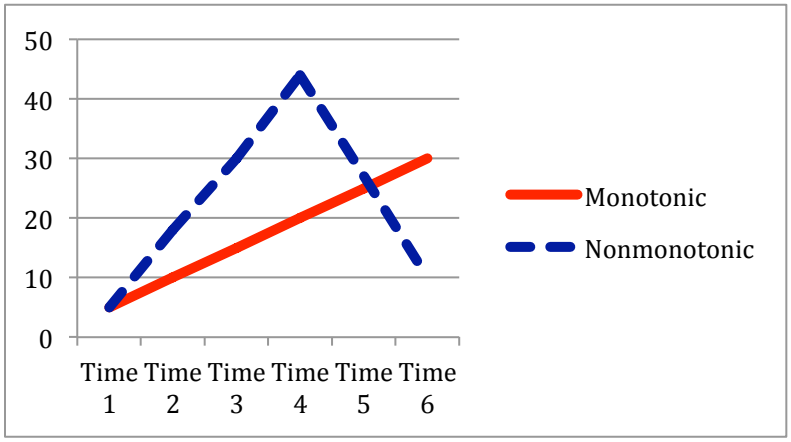
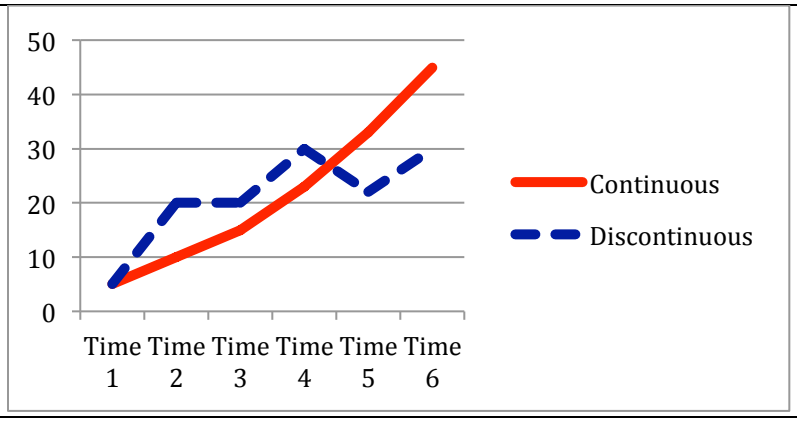
Dimension	Range	Graphical Example
Linearity	Linear vs. Curvilinear	
Direction	Monotonic vs. Nonmonotonic	
Continuity	Continuous vs. Discontinuous	

Figure 1. Growth pattern taxonomy by Elman and colleagues (1999) and visual representation used in Rojas & Iglesias (2013).

consistently increasing or decreasing. Nonmonotonic refers to data trends that alternate periods of positive and negative growth. Continuity refers to the consistency of growth. Continuous refers to trends that are consistent. Discontinuous refers to trends that exhibit sudden shifts of inconsistent positive or negative growth. See Figure 1 for a visual representation of each aspect of growth. The growth trajectory terminology was used to describe the developmental patterns of the participants' narratives.

CHAPTER IV

RESULTS

The current study examined the narrative macrostructure growth of young SEB children who matriculated from kindergarten through second grade. The research questions asked whether there were distinct growth trajectories for outcome variables, gender influenced narrative macrostructure growth, children earned different scores over time, initial English language proficiency affect narrative macrostructure growth, and if initial English language proficiency was indicative of performance on outcome measures over time. Narrative macrostructure was measured using two outcome variables, PSGE Index and EC Index.

Descriptive Results

Wave 1

Results for initial English language proficiency (NDW), PSGE Index, EC Index and independent variables (i.e., Gender (male/female), Average Age, Assessment Time, English NDW, and Spanish NDW) for the fall of kindergarten (Wave 1) are presented in Table 11. The PSGE and EC Indices descriptive results for all Waves (Wave 1: fall of kindergarten, Wave 2: spring of kindergarten, Wave 3: fall of first grade, Wave 4: spring of first grade, Wave 5: fall of second grade, and Wave 6: spring of second grade) are presented first, followed by gender comparisons

At the outset of the study (fall, Wave 1), there were a total of 189 participants with males and females approximately distributed between the two genders (84 males, 105 females). Participants were an average age of 5 years and 6 months and both genders

were roughly the same average age. All participants were assigned the same average assessment time of October that was used in the statistical analyses.

At Wave 1, all participants performed higher on the PSGE Index (the ability to recall story grammar elements) than the EC Index (the ability to impose structure upon those elements). Performance on the PSGE and EC indices for both genders was very close to the mean for male and female participants (PSGE Index: mean = .41, males = .41, females = .40; EC Index: mean = .12, males = .12, females = .13) as seen in Table 11. The performance between males and females on both indices in the fall of kindergarten (Wave 1) was not statistically different (PSGE Index: p = .83, EC Index: p = .79, See Table 14).

The initial language skills for males and females, as measured by English NDW and Spanish NDW, were closer for English NDW (male = 54, female = 56) than Spanish NDW (male = 52, female = 60). At Wave 1, English NDW performance between males and females was not statistically different (p = .64). However, the difference between males and females on Spanish NDW was statistically different (p = .00) at Wave 1. When participants retold English narratives, gender did not influence outcome measure scores (PSGE and EC Indices) in the fall of kindergarten.

Results showed that participants' initial Spanish and English language proficiency as measured by number of different words for males and females were comparable and not statistically different (English NDW: males = 54, females = 56; Spanish NDW: Males 52, Females = 60). If one were to use NDW as a proxy for language proficiency, then these scores might be interpreted as children were similarly proficient in both English and Spanish in the fall of kindergarten. The performance on English and

Spanish language proficiency measures (NDW) indicated that children were true bilinguals (Kohnert, Kan, & Conboy, 2010), performing equally in both English and Spanish.

Graphical Results

Descriptive data for the outcome measures were represented visually using three different graphical representations: line graphs, multiple-line graphs, and scatterplots. Traditional growth curve modeling (GCM), which estimate the fixed effects (initial status; growth rates) and variance components (inter-individual variance; intercept-slope covariance) was not conducted because multilevel modeling was not warranted. Therefore, traditional growth curves were not plotted with the predicted values of outcome variables across time.

Instead, the raw data were entered into multiple trend-line graphs in IBM SPSS Statistics for Windows and Mac, Version 20.0 (IBM Corp, 2011) to allow for examination of trends over time. The variables graphed were the mean of the dependent

Table 11

Descriptive Results at Wave 1

	N	Age	Average Assessment Time	PSGE Index	EC Index	E-NDW	S-NDW
All	189	5.59 (.02)	October .18	.41 (.01)	.12 (.01)	55 (2)	57 (1)
Male	84	5.57 (.31)	October .18	.41 (.17)	.12 (.13)	54 (20)	52 (19)
Female	105	5.61 (.34)	October .18	.40 (.17)	.13 (.13)	56 (23)	60 20)

Note. Time of assessment: fall of Kindergarten; FWAY = *Frog Where Are You?; n* = number of participants; SD = standard deviation; PSGE = Proportion of Story Grammar Elements Index, EC = Episodic Complexity; E-NDW = English number of different words; S-NDW = Spanish number of different words.

variables (either PSGE Index or EC Index) on the *y*-axis and the six Waves on the *x*-axis. Additional individual trends were graphed that focused on patterns produced by gender and initial English language proficiency level to visualize inter-individual variance in performance.

Scatterplots were graphed to determine variability in performance. Two terms were used to describe the scatterplot results: *clustered* and *scattered.* Points that were closely related to regression line and form a "football" shape were interpreted as *clustered* with less variability. Points that had no recognizable shape were interpreted as *scattered* with more variability.

PSGE Index

Recall that the PSGE index was a measure of the proportion of story grammar elements recalled from secondary episodes presented in the narrative models. As expected in hypothesis one, the average PSGE Index for all participants was observed to increase over time and is shown in Figure 2. There was a steady increase in PSGE from fall of kindergarten (.41) to spring of first grade (.75). A minimal decrease in performance was observed from spring of first grade to fall of second grade (.75 to .72). By spring of second grade (.83), scores had begun to increase once more. Interestingly, the PSGE scores during kindergarten appeared to be scattered, suggesting that there was great variability in the number of SGEs children were able to recall at school entry. However, by second grade, PSGE scores were clustered closely together suggesting that children were becoming more skilled at recalling story grammar elements and included them in their retells. The increased stability in the PSGE Index may also be paralleled by

more stable English language proficiency as demonstrated in the increase in English NDW scores over time.

Appendix K contains scatterplots and boxplots of PSGE Index performance at each wave for all children. In the fall of kindergarten, scatterplots of all participants demonstrated variability in performance on the PSGE Index with scattered points ranging from 0 to .8. Each wave forward exhibited a smaller range of points scattered with the cluster forming a football shape in the spring of first grade. This indicated performance on this skill was less variable and may be more stable. This trend continued through the spring of second grade. However, a little more variability was observed in the fall of second grade.

EC Index

Recall the EC Index was a measure of the ability to impose an episodic structure on story grammar elements recalled. As expected in hypothesis one, the average EC Index for all participants was observed to increase over time and is shown in Figure 3. Participant performance was linear (in a straight line) from fall of kindergarten (.12) until spring of first grade (.46). There was evidence of nonmonotonic and discontinuous

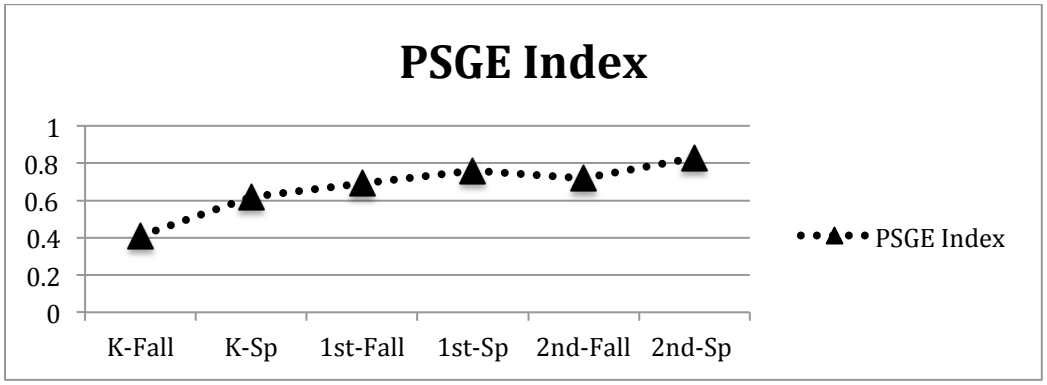


Figure 2. Average portion of Story Grammar Elements Index at each wave for all participants.

trends with a change in direction with scores decreasing minimally in the fall of first grade (.46) to spring of first grade (.39). By fall of second grade (.43), scores became linear (straight line), monotonic (one direction), and continuous (increasing). Interestingly, the EC scores during kindergarten through spring of first grade appeared to be increasingly scattered indicating variability in the range of skills. By the fall of second grade, performance was less scattered indicating more stability in the skill of imposing structure on story grammar elements. These results suggested that there was great variability in the ability to impose an episodic structure on story grammar elements recalled from kindergarten through the end of second grade. This is interesting because we typically think of development as a linear process rather than one with fluctuations exhibited by sporadic increases and decreases in skills (Paradis, Genesse, & Crago, 2004, 2011).

Appendix L contains scatterplots and boxplots of EC Index performance at each wave for all children. A different pattern was observed for the EC Index in comparison to the PSGE Index. In the fall of kindergarten, the least variability in points was observed for all participants. Increased variability in performance from fall to spring of kindergarten was observed. Similar scatter was observed from spring of kindergarten through spring of second grade.

Although both PSGE and EC Indices increased from fall of Kindergarten through spring of second grade, the two indices demonstrated different growth patterns from fall of first grade to fall of second grade. The participants' performance for the PSGE Index increased in the fall of first grade, whereas the EC Index demonstrated a decrease. Both indices increased in second grade (see Figure 4).

Research Question One

Is there a distinct trajectory of growth (linearity, direction, continuity) in English narrative macrostructure as measured by PSGE and EC Indices?

The first research questions asked whether there were distinct growth trajectories for narrative performance on PSGE and EC Indices. The mean performance for each dependent variable (PSGE and EC Indices) was calculated at each of the six assessment periods and then those averages were graphed to determine the average growth in regards to its shape (linearity, direction, and continuity). Upon visual examination of the graphical representation of the results, both of the mean trend lines for PSGE and EC

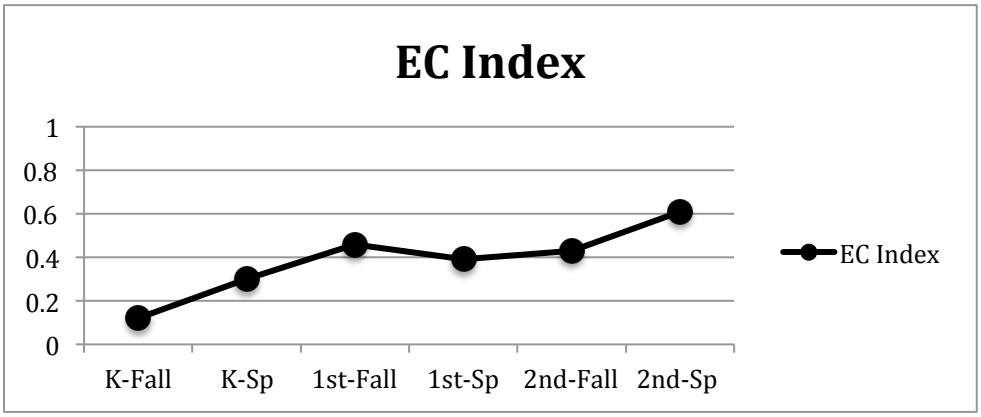


Figure 3. Average Episodic Complexity Index at each wave for all participants.

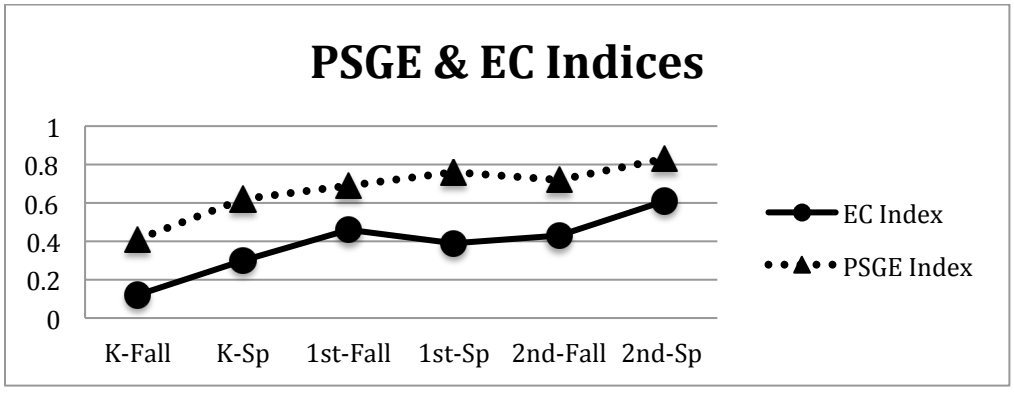


Figure 4. Proportion of Story Grammar Elements Index and Episodic Complexity Index at each time point for all participants.

Indices were close to linear, nonmonotonic (changing directions), and discontinuous (increased and decreased) (see Figure 4 for the average trend line).

Individual performances on both PSGE and EC Indices were graphed using a multiple linear graph to visually present the individual trends of performance. During the fall of kindergarten, individual performance on the PSGE Index exhibited a large amount of scatter between participants, demonstrating variability. During the spring of second grade, all individuals demonstrated a minimal scatter (less variability) and an increase in scores. Graphical representations of individual performance for PSGE Index appeared to be curvilinear, nonmonotonic, and discontinuous as seen in Figure 5.

During the fall of kindergarten, individual performance on the EC Index demonstrated the least amount of scatter (less variability) in the fall of kindergarten than the spring of second grade where there was a large amount of scatter (more variability). Graphical representations for EC Index appeared to be curvilinear, nonmonotonic, and discontinuous as see in Figure 6.

Research Question Two

Do males and females earn different scores on narrative macrostructure as measured by PSGE and EC Indices across the six time points during kindergarten through second grade?

Gender. The second research question asked whether gender, categorized as male or female, played a role in performance on outcome measures. Recall that gender was categorized as male or female. Four analyses were conducted to determine if there were gender effects on narrative performance.

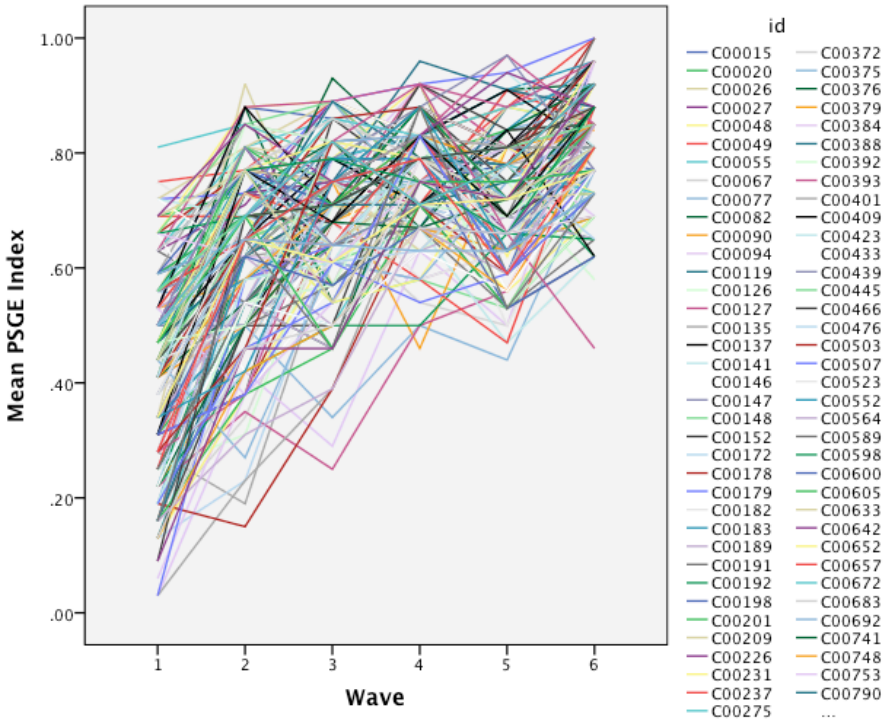


Figure 5. Mean PSGE Index by time (wave) for each participant over time.

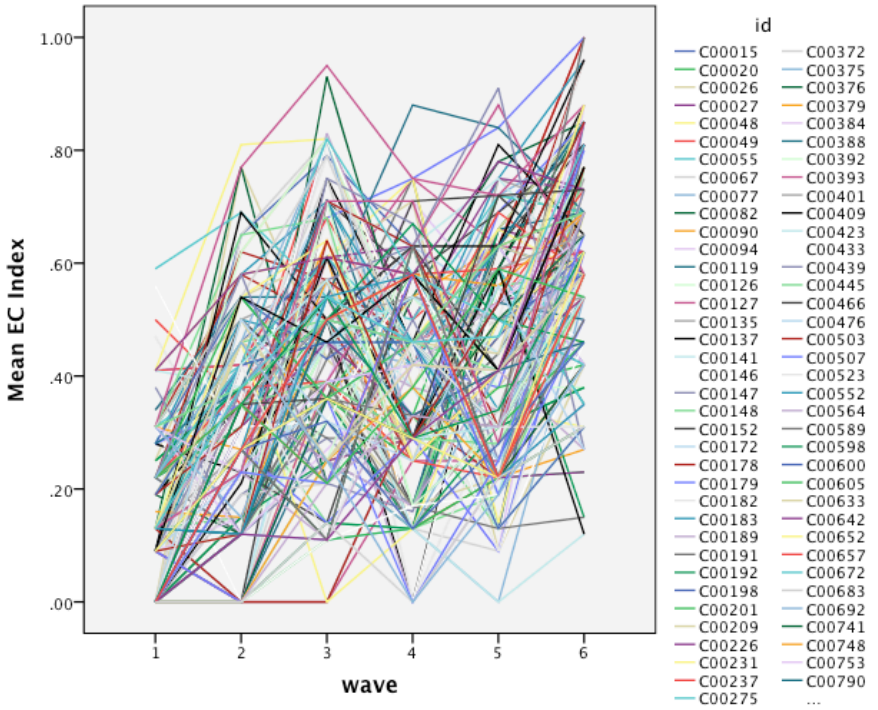


Figure 6. Mean EC Index by time (wave) for each participant over time.

PSGE Index Mean Performance. Mean performance on PSGE and EC indices were calculated at each of the six assessment periods for both genders. The average PSGE Index followed a similar pattern for males and females. Participant performance on PSGE Index increased from fall of kindergarten (.41 and .40) to spring of second grade (.81 and .84). Specifically, performance increased steadily from fall of kindergarten (.41 and .40) through spring of first grade (.76 and .76), minimally decreased from spring of first grade to fall of second grade (.72 and .72), and increased from fall of second grade to spring of second grade (.81 and .84). Both males and females retold approximately the same portion of story grammar elements at each wave (see Table 12 for gender averages on the PSGE Index and Figure 7 for male and female averages on PSGE Index).

PSGE Index Graphical Results. The average trend lines for males and females on the PSGE Index appeared to be close to linear, nonmonotonic, and discontinuous as seen in Figure 7. Additional graphical analyses of the PSGE Index were conducted using scatterplots to examine the variability in responses on the PSGE Index across all six assessment periods. The PSGE Index performance for males was scattered from fall of kindergarten through spring of kindergarten and demonstrated more of a cluster formation from fall of first grade through spring of second grade. The PSGE Index performance for females followed the exact same pattern. See Appendix K for scatterplots and boxplots of PSGE Index performance for males at each wave. There continued to be less variability in the PSGE index indicating the ability to recall story grammar elements became stable.

EC Index Mean Performance. The average EC Index followed a similar pattern

for males and females. Performance increased from fall of kindergarten (.12 and .13) to spring of second grade (.58 and .63). Specifically, performance for both genders increased steadily from fall of kindergarten (.12 and .13) through fall of first grade (.45 and .47), minimally decreased from fall of first grade to spring of first grade (.38 and .39), and increased from spring of first grade (.38 and .39) to spring of second grade (.58 to .63) (See Table 12 for gender averages on the EC Index).

EC Index Graphical Results. The average graphical representations for males and females on the EC Index appeared to be close to linear, nonmonotonic, and discontinuous as seen in Figure 8. Additional graphical analyses of the EC Index were conducted using scatterplots to examine the variability in responses on the EC Index

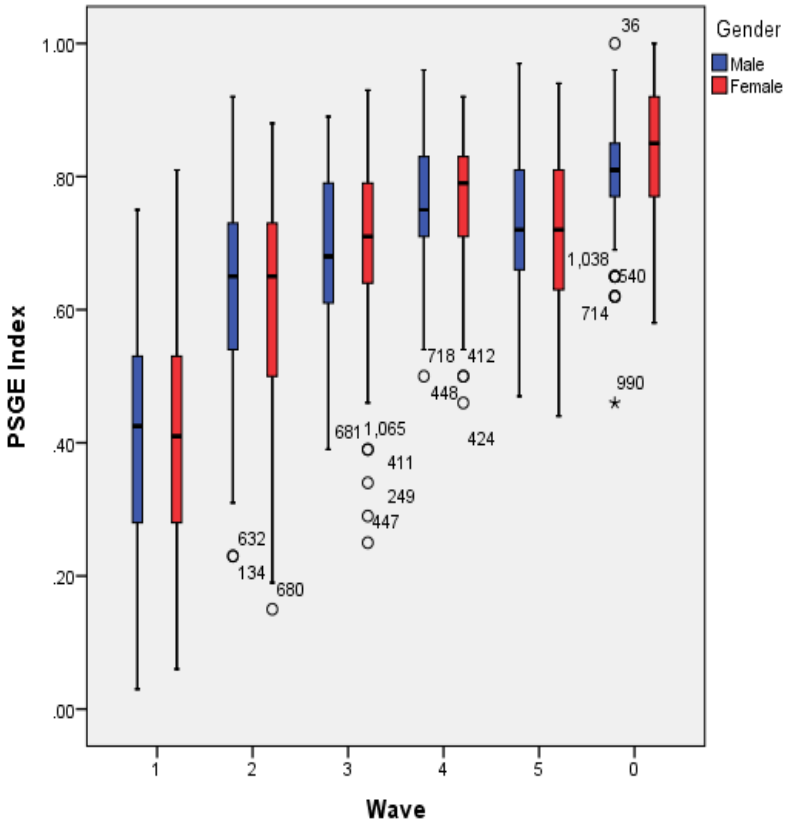


Figure 7. Mean PSGE Index by gender (males and females) over time.

across all six assessment periods. The EC Index performance for males was scattered from fall of kindergarten through spring of second grade The EC Index performance for females exhibited the same pattern. See Appendix L for scatterplots and boxplots of EC Index performance for females at each wave. There continued to be the least variability in EC Index performance in the fall of kindergarten followed by a similar increase in variability from spring of kindergarten through the spring of second grade indicating the ability to recall story grammar elements did not become stable.

Comparing PSGE Index and EC Index Trend Lines. Research question two focused on whether individual trend lines differed within a gender and how individual performance might have contributed to the growth of the PSGE and EC Indices. Both genders demonstrated similar individual trend lines for the PSGE Index; beginning with a lot of variability in the fall of kindergarten followed by an increase in PSGE Index scores

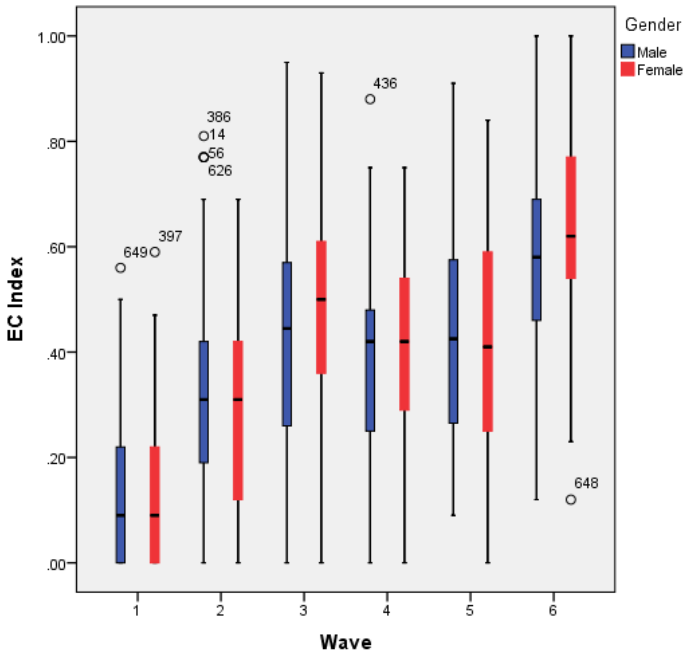


Figure 8. Mean EC Index by gender (males and females) over time.

with less variability in the spring of second grade. The individual trend lines for males and females on the EC Index were also similar. However, in contrast to the PSGE Index, performance for both genders on the EC Index in the fall of kindergarten demonstrated large variability, which minimally decreased in variability by the end of second grade (See Figures 9 through 12 for individual trend lines for males and females on the PSGE and EC Indices). It appeared that over time, males and females demonstrated a lot of individual variability in their performance. Therefore, until these skills become more stable, it is difficult to identify children who may be at-risk for narrative skills. However, it is important to understand that developmentally, it is expected to see fluctuations in performance.

Based on descriptive results, overall and individual performances for males and females on both the PSGE and EC Indices yielded similar trend lines across gender. This indicated that we would not expect to see males and female perform differently on retelling story grammar elements (PSGE Index) and imposing a structure on these elements (EC Index) from kindergarten through the end of second grade. See Figures 9 – 11 for graphical displays of individual trend lines.

Inferential Statistics

Inferential results are presented in response to the research questions two through five. Pearsons' product moment correlations, independent *t* tests, two-way repeated measures ANOVA, and paired sample *t* tests were conducted to answer these questions.

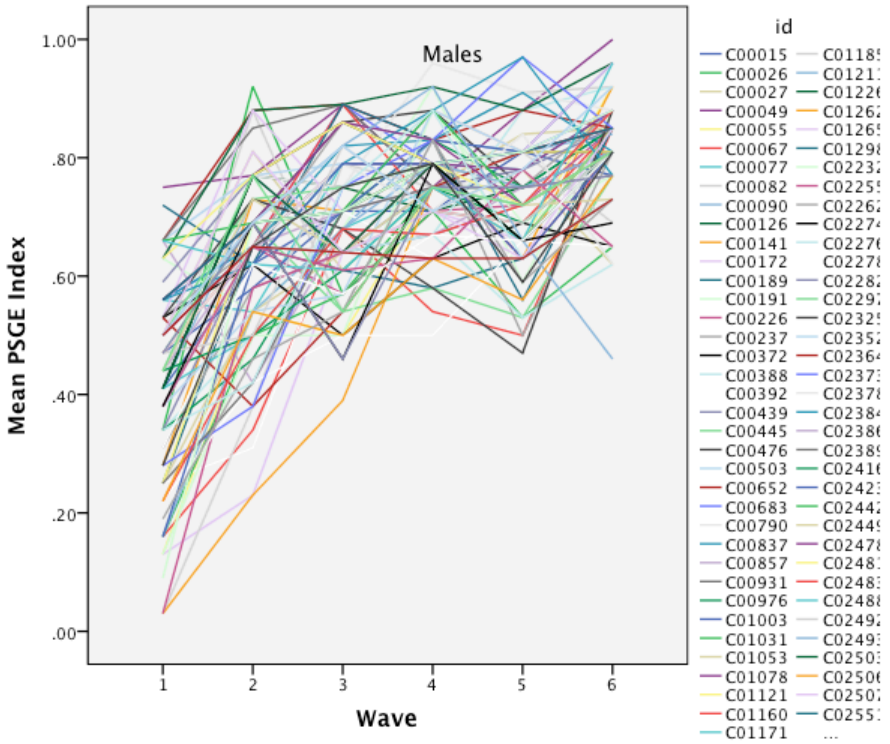


Figure 9. Individual trend lines for PSGE Index by males.

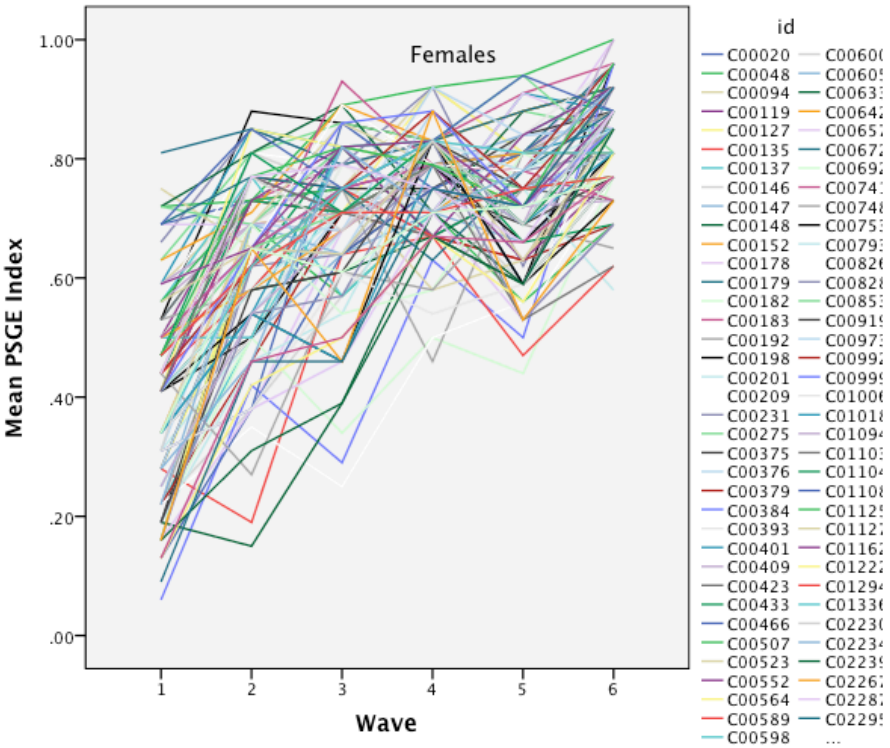


Figure 10. Individual trend lines for PSGE Index by females.

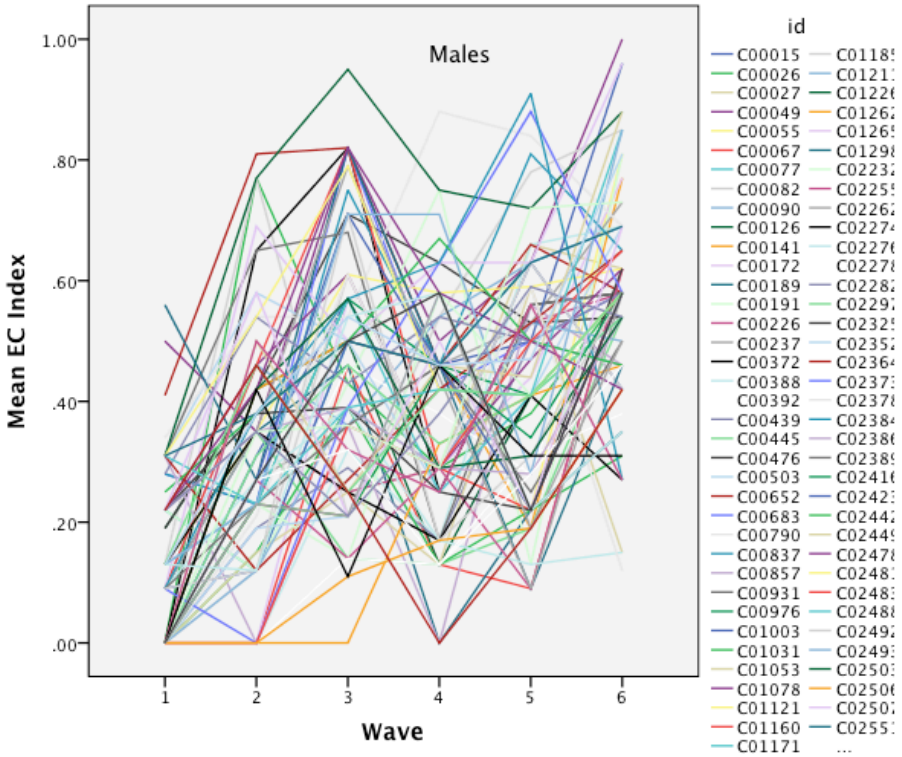


Figure 11. Individual trend lines for EC Index by males.

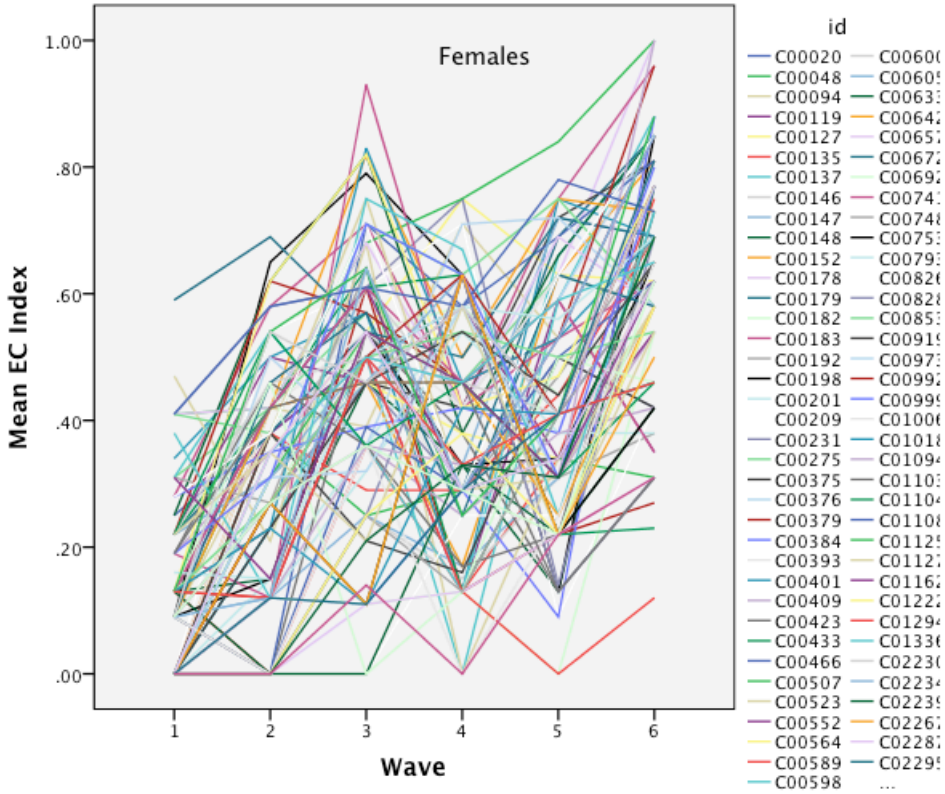


Figure 12. Individual trend lines for EC Index by females.

Table 12

Descriptive Results by Wave

	K Fall FWAY	K Spring FGTD	1st Fall FOHO	1st Spring OFTM	2nd Fall FWAY	2nd Spring FGTD
n	189	189	189	189	189	189
Males	84	84	84	84	84	84
Females	105	105	105	105	105	105
Average Age (SD)	5.59 (.02)	6.17 (.02)	6.59 (.02)	7.16 (.02)	7.60 (.02)	8.14 (.03)
Average Assessment Time	October .18	May .75	October 1.18	May 1.75	October 2.18	May 2.75
PSGE Index	.41 (.01)	.62 (.01)	.69 (.01)	.75 (.01)	.72 (.01)	.83 (.01)
Male	.41	.62	.69	.76	.72	.81
Female	.40	.62	.70	.76	.72	.84
EC Index Ratio	.12 (.01)	.30 (.01)	.46 (.01)	.39 (.01)	.43 (.01)	.61 (.01)
Male	.12	.32	.45	.38	.43	.58
Female	.13	.29	.47	.39	.42	.63
E-NDW	55 (2)	73 (2)	84 (2)	86 (2)	90 (1)	110 (1)
S-NDW	57 (1)	75 (2)	86 (2)	80 (1)	82 (1)	94 (1)

Note. Time of assessments: K-Fall = fall of Kindergarten, K-Spring = spring of Kindergarten, 1st-Fall = fall of 1st grade, 1st-Spring = spring of 1st grade, 2nd-Fall = fall of 2nd grade, 2nd-Spring = spring of 2nd grade; FWAY = *Frog Where Are You?;* FGTD = *Frog Goes to Dinner;* FOHO = *Frog on His Own*; OFTM = *One Frog Too Many;* n = number of participants; SD = standard deviation; PSGE = Proportion of Story Grammar Elements Index, EC = Episodic Complexity; E-NDW = English number of different words; S-NDW = Spanish number of different words.

Research Question Two: Do males and females earn different scores on narrative macrostructure as measured by PSGE and EC Indices across the six time points during kindergarten through second grade?

Pearson's product moment correlations were computed comparing gender performance on the PSGE and EC Indices across all waves and are shown in Table 13. As expected, results indicated that the scores were highly and significantly correlated. Interestingly, results for male and females followed the same correlational pattern, as the groups combined. Males and females appeared to be developing narrative skills similarly. A positive linear relationship in their ability to recall story grammar elements (PSGE Index) and impose a structure on the elements recalled (EC Index) was observed. Males and females recalled story grammar elements and imposed a structure in the same developmental pattern indicating gender was not a factor that differentiated children's narrative skills.

Independent samples *t* tests were conducted to determine if there were significant differences between males and females on PSGE Index, EC Index, English NDW, and Spanish NDW at each Wave and are presented in Table 14. Results for the PSGE Index were not significant from Wave 1 to Wave 5. However, at Wave 6, males and females performed significantly different on the PSGE Index with a *p*-value of .05 in favor of the females (Males = .81, Females = .84). The results at Wave 6 on the PSGE Index confirmed the hypothesis that gender would play a significant role in narrative growth.

The results of independent *t*-tests were not significant for the EC Index and English NDW variables, which was counter to the research hypothesis that gender would be a significant factor in narrative development. Although EC Index and English NDW

differences were not significant (p = .79, p = .64 respectively), performance did favor the females (EC Index: Males = .58, Females = .63 and English NDW: Males = 107, Females = 112). Additionally, the trends for EC Index and English NDW were similar from Wave 1 to Wave 6. In the fall of kindergarten, performance for males and females was not statistically different with large p-values (EC Index: p = .79, English NDW: p = 64) and by the spring of second grade, p-values approached significance (EC Index: p = .07, English NDW: p = .07). This indicated that as English language skills improved, there was a potential to see differences in performance between males and females on NDW and the ability to impose structure on story grammar elements. This suggested that in young SEB children, narrative performance differences may appear once children have more knowledge of the English language.

Interestingly, at Wave 1 the test was significant (p = .00), for Spanish NDW and supported by the hypothesis that gender was a significant factor in narrative development

Table 13

Proportion of Story Grammar Elements Index Ratio and Episodic Complexity Index Correlation Results

	K Fall FWAY	K Spring FGTD	1st Fall FOHO	1st Spring OFTM	2nd Fall FWAY	2nd Spring FGTD
All	.776**	.881**	.900**	.807**	.904**	.815**
Males	.805**	.881**	.918**	.824**	.910**	.764**
Females	.757**	.883**	.884**	.793**	.900**	.859**

Note. Time of assessments: K-Fall = fall of Kindergarten, K-Spring = spring of Kindergarten, 1st-Fall = fall of 1st grade, 1st-Spring = spring of 1st grade, 2nd-Fall = fall of 2nd grade, 2nd-Spring = spring of 2nd grade; FWAY = *Frog Where Are You?;* FGTD = *Frog Goes to Dinner*; FOHO = *Frog on His Own*; OFTM = *One Frog Too Many*; ** = Correlation is significant at the 0.01 (2-tailed).

in favor of the females (Males: average = .52, standard deviation = 19; Females: average = .60, standard deviation = 20). However, since this study is examining only English narratives, Spanish NDW was not utilized in the analysis and presented for descriptive purposes. (See Table 14 for independent-samples *t*-test results.)

Table 14

Independent *t*-Test Results of Variables by Gender with Means, Standard Deviations, and *p*-Values

	K Fall FWAY *p*-value Mean (SD)	K Spring FGTD *p*-value Mean (SD)	1st Fall FOHO *p*-value Mean (SD)	1st Spring OFTM *p*-value Mean (SD)	2nd Fall FWAY *p*-value Mean (SD)	2nd Spring FGTD *p*-value Mean (SD)
PSGE Index	*p* = .83	*p* = .87	*p* =.68	*p* =.83	*p* =.86	*p* =.05+
Males	.41 (.17)	.62 (.15)	.69 (.12)	.76 (.09)	.72 (.11)	.81 (.09)
Females	*.40 (.17)*	.62 (.15)	.70 (.13)	.76 (.09)	.72 (.12)	.83 (.09)
EC Index	*p* =.79	*p* =.41	*p* =.64	*p* =.67	*p* =.58	*p* =.07
Males	*.12(.13)*	.32(.20)	.45(.21)	.38(.19)	.43(.20)	.58(.18)
Females	*.13(.13)*	.29(.18)	.47(.20)	.39(.19)	.42(.20)	.63(.19)
E-NDW	*p* =.64	*p* =.35	*p* =.34	*p* =.28	*p* =.21	*p* =.07
Males	*55(20)*	*71(21)*	*82(23)*	*84(19)*	*88(16)*	*107(17)*
Females	*56(23)*	*75(26)*	*85(25)*	*88(22)*	*91(20)*	*112(20)*
S-NDW	*p* =.00*	*p* =.00*	*p* =.00*	*p* =.00*	*p* =.00*	*p* =.00*
Males	*52(19)*	*69(16)*	*80(23)*	*74(14)*	*78(16)*	*90(14)*
Females	*60(20)*	*80(22)*	*90(25)*	*84(20)*	*86(18)*	*97(18)*

Note. Time of assessments: K-Fall = fall of Kindergarten, K-Spring = spring of Kindergarten, 1st-Fall = fall of 1st grade, 1st-Spring = spring of 1st grade, 2nd-Fall = fall of 2nd grade, 2nd-Spring = spring of 2nd grade; FWAY = *Frog Where Are You?;* FGTD = *Frog Goes to Dinner;* FOHO = *Frog on His Own*; OFTM = *One Frog Too Many*; SD = standard deviation; PSGE = Proportion of Story Grammar Elements Index, EC = Episodic Complexity; E-NDW = English number of different words; S-NDW = Spanish number of different words;
* = Significant *p*-value .00; + = .051 significance.

Research Question Three

Do SEB children earn different scores on narrative macrostructure as measured by PSGE and EC Indices across the six assessment periods during kindergarten through second grade?

Two two-way repeated measure ANOVAs were conducted separately for each dependent variable (PSGE Index and EC Index) to determine if SEB children earned different scores on narrative macrostructure as measured by PSGE and EC Indices across the six assessment periods. Time was represented as Waves 1, 2, 3, 4, 5, and 6 as a within-subjects variable and initial English Language Proficiency Level (low, average, high) was the between-subjects variable. Partial eta squared effect sizes were calculated and the benchmark for interpreting partial eta squared η^2 was small = .01, medium = .06, and large = .14 (Richardson, 2011).

PSGE Index

Repeated Measures ANOVA. Results for the PSGE Index revealed that the Mauchly's test for Sphericity assumption of sphericity was violated (chi-square = 56.421, p = .000) resulting in a lack of homogeneity of variance (variances are not equal). Therefore, Greenhouse-Geisser corrections were reported. There were significant main effects for Time ($F(4,819) = 258.73$, p = .000, $p\eta^2$=.58) indicating as children matriculated through grades, they improved their performance on PSGE Index.

Paired Sample *t* Tests. Paired sample *t* Tests were conducted to follow up the significant Time main effect. At each point in time, children's stories yielded a significantly higher PSGE Index than the preceding time (Figure 2 shows the trajectory of change in the PSGE Index. Notice that there appeared to be less growth from Wave 2

to Wave 3 and negative growth from Wave 4 to Wave 5). These periods represent the summers between testing in the spring of one year and the fall of the next year and suggested a regression in the ability to recall story grammar elements during this time.

Difference Score. A difference score was calculated between each wave for the PSGE Index. The effect size of growth was calculated at each Wave by computing the mean difference between each consecutive wave (fall to spring and spring to fall). For example, if a participant earned a PSGE Index of .35 in the spring of kindergarten and a PSGE Index of .40 in fall of first grade, the performance on spring was subtracted from fall performance (e.g., .40 - .35 = .05). Difference scores between waves during the school year and over the summer were calculated. There were a total of five difference scores calculated for each outcome measure. See Table 15 for difference scores between waves.

Effect Size. Effect sizes between the average PSGE Index performance at each consecutive wave was calculated to determine the amount of growth during summer vacation in comparison to growth during the school year. The averages and standard deviations of each consecutive wave were entered into an effect size calculator to calculate a Cohen's *d* effect size (http://www.uccs.edu/~lbecker/). The values appear in Table 15. The most growth in the PSGE Index occurred during the kindergarten and second grade years. The least growth occurred during Summer 1 and Summer 2, in which children's PSGE Index actually decreased. The findings suggest that over summer, the participants had relatively smaller growth than during the school year. It was hypothesized that there would be a loss of skills on PSGE Index over summer vacation. This hypothesis was not confirmed for Summer 1. The hypothesis was confirmed for

Summer 2 with participants demonstrating a loss on PSGE skills. See Table 15 for Cohen's *d* effect sizes.

EC Index

Repeated Measures ANOVA. Results for the EC Index revealed that the Mauchly's test for Sphericity assumption of sphericity was violated (chi-square = 40.86, $p = .000$) indicating a lack of homogeneity of variance. Therefore Greenhouse-Geisser corrections were reported. There were significant main effects for Time [$F(5,869) = 107.63$, $p = .000$, $p\eta^2 = .367$].

Paired Sample *t* Tests. Paired sample *t* Tests were conducted to follow up the significant Time main effect. (Figure 3 shows the trajectory of change in the EC Index.) Children's stories yielded a significantly higher EC Index at each point in time with the

Table 15

PSGE Index Difference Scores and Effect Sizes for Growth Across Waves

Wave Comparison	Grade	Wave	Wave Mean	Wave	Wave Mean	Dir of Diff	Mean Diff	*d*
Wave 1 – Wave 2 K-Fall to K-Spring	Kindergarten	K-Fa	.404	K-Sp	.614	+	.21*	1.46
Wave 2 – Wave 3 K-Spring to 1st-Fall	Summer 1	K-Sp	.614	1st-Fa	.697	+	.08*	.52
Wave 3 – Wave 4 1st-Fall to 1st-Spring	1st-Fall	1st-Fa	.697	1st-Sp	.760	+	.06*	.61
Wave 4 – Wave 5 1st-Spring to 2nd-Fall	Summer 2	1st-Sp	.760	2nd-Fa	.714	-	-.05*	-.39
Wave 5 – Wave 6 2nd-Fall to 2nd-Spring	2nd Grade	2nd-Fa	.714	2nd-Sp	.830	+	.12*	1.06

Note. Wave Comparison = the two waves compared; Wave = time of assessment; Wave Mean = Average Proportion of Story Grammar Elements Index; Dir of Diff = Direction of the difference = "+" is increase, "-" is decrease; Mean Diff = Mean Difference between wave comparison; *d* = Cohen's *d* effect size; * Indicates a significant *p* –value for difference.

exception of Wave 4 to Wave 5. Notice that there appeared to be less growth Waves 2 to 3 and negative growth from Waves 4 to 5. Not surprisingly, these periods of decline represent the summers between testing in the spring of one year and the fall of the next year.

Difference Score. A difference score was calculated between each wave for the EC Index. The effect size of growth was calculated at each Wave by computing the mean difference between each consecutive wave (fall to spring and spring to fall). For example, if a participant earned an EC Index of .303 in the spring of kindergarten and a EC Index of .461 in fall of first grade, the performance on spring was subtracted from fall performance (e.g., .461 - .303 = .18). Difference scores between waves during the school year and over the summer were calculated. There were a total of five difference scores calculated for each outcome measure. See Table 16 for difference scores between waves.

Effect Size. Effect sizes between each wave were calculated to determine the amount of growth during summer vacation in comparison to growth during the school year for the EC Index. The values appear in Table 16. The averages and standard deviations of each consecutive wave were entered into an effect size calculator to calculate a Cohen's *d* effect size (http://www.uccs.edu/~lbecker/). Interestingly, the most growth in the EC Index occurred during Summer 1 and second grade. Typically, it was expected to see a loss in skills to impose structure on story grammar elements during the summer. Instead, participants demonstrated the most amount of growth ($d = 3.14$). The second largest period of growth in these skills was during second grade. The least amount of growth occurred during first grade ($d = -3.12$) and during Summer 2 ($d = .20$). In first grade, children's ability to impose structure on story grammar elements in which

children's EC Index actually decreased. During Summer 2, children's performance on EC Index showed small amount of growth with a .20 effect size.

Research Question Four

Do SEB children with low, average, or high language proficiency earn different narrative macrostructure scores measured with PSGE and EC Indices?

Recall that initial language proficiency was measured by calculating the NDW at the fall of kindergarten and children's performance was grouped into three categories: low, average, and high initial English language proficiency. Three analyses were conducted to determine the effects of initial English language proficiency on outcome measures.

Table 16

EC Index Difference Scores and Effect Sizes for Growth Across Waves

Wave Comparison	Grade	Wave	Wave Mean	Wave	Wave Mean	Dir of Diff	Mean Diff	Effect Size Cohen's *d*
Wave 1 – Wave 2 K-Fall to K-Spring	Kindergarten	K-Fa	.124	K-Sp	.303	+	.15*	1.10
Wave 2 – Wave 3 K-Spring to 1st-Fall	Summer 1	K-Sp	.303	1st-Fa	.461	+	.18*	3.14
Wave 3 – Wave 4 1st-Fall to 1st-Spring	1st Grade	1st-Fa	.461	1st-Sp	.387	-	.10*	-3.12
Wave 4 – Wave 5 1st-Spring to 2nd-Fall	Summer 2	1st-Sp	.387	2nd-Fa	.426	+	.05*	.20
Wave 5 – Wave 6 2nd-Fall to 2nd-Spring	2nd Grade	2nd-Fa	.426	2nd-Sp	.606	+	.19*	2.64

Note. Wave Comparison = the two waves compared; Wave = time of assessment; Wave Mean = Average Episodic Complexity Index; Dir of Diff = Direction of the difference = "+" is increase, "-" is decrease; Mean Diff = Mean Difference between wave comparison; * Indicates a significant *p* –value for difference.

Pearson's Product Moment Correlation. Pearson's Product Moment correlation coefficients were computed for the PSGE Index and the EC Index among the three different English language profile groups to determine if PSGE and EC Indices were differently correlated for initial English language proficiency groups. The initial English language proficiency levels were calculated using participants' NDW scores from the fall of kindergarten. Overall, English language proficiency groups' performance on PSGE and EC Indices were similarly correlated. The performance on the PSGE and EC Indices increased in correlational strength from Wave 1 to Wave 6 for all of the children. Although the correlation coefficients for the PSGE and EC Indices at the fall of kindergarten are considered to be large, they ranged from $r = .53$ to $r = .73$ with the lowest language profile at the lower end and the higher language profile at the higher end. Interestingly, by the end of the study in the spring of second grade, the participants identified with low- and high- English language proficiency had similarly correlated performance on PSGE and EC Indices. The two indices largely correlated with similar coefficients near $r = .86$ indicating a strong linear relationship between the ability to recall story grammar elements and impose structure on those elements. (See Table 17 for correlation coefficients results by initial English language proficiency.)

Independent-Samples *t* Tests. Independent-samples *t* Tests were conducted to evaluate the hypothesis that participants in the different English language profile groups performed differently on PSGE and EC Indices at fall of kindergarten. The tests were significant for comparisons of each pair of profile groupings. Results indicated that each group began at a significantly different level of performance for both indices. Furthermore, the Low language level group had the lowest PSGE and EC Indices, the

Average language level group performance on each index was higher than the Low group, and the High group performed the highest on both indices in fall of kindergarten. (See Tables 18 and 19 for independent-samples *t*-test comparisons and results.) Graphical representations of the results on the PSGE and EC Indices indicated individual variability within the Low, Average and High groups. See Appendix M for PSGE Index and Appendix N for EC Index scatterplots by English language profile at Wave 1, Wave 6, and overall).

Results from the separate two-way repeated measures ANOVA indicated significant group main effects for the PSGE Index, [$F(2,186) = 66.79$, $p = .000$, $p\eta^2 = .42$] and for the EC Index, [$F(2,186) = 38.85$, $p = .000$, $p\eta^2 = .30$].

Table 17

Correlation Coefficients for PSGE Index and EC Index by Initial English Language Proficiency

English Language Proficiency	K Fall Wave 1	2nd Spring Wave 6	Overall (K Fall to 2nd Spring)
Low	.53**	.93**	.83**
Average	.67**	.77**	.86**
High	.73**	.91**	.88**

Note. English Language Proficiency = number of different words at fall of kindergarten; K-Fall = fall of kindergarten; 2nd-Sp = spring of 2nd grade; Low = Initial number of different words below 1 standard deviation below average; Average = Initial number of different words within the average range; High = Initial number of different words above 1 standard deviation below average; ** indicates significant *p*-value at .01 level (2-tailed). Benchmark for correlation coefficients: small = .10, medium = .30, large = .50.

Table 18

Independent t Test for Initial PSGE Index by initial English Language Proficiency

Low vs. Average	Low vs. High	Average vs. High
Low M = .01 SD = (.03)	Low M = .01 SD = (.03)	Average M = .11 SD = (.10)
Average M = .11 SD = (.10)	High M = .31 SD = (.14)	High M = .31 SD = (.14)
p - value .00*	*p* - value .00*	*p* - value .00*

Note. Three independent *t-test* comparisons in fall of kindergarten: Low vs Average, Low vs. High, and Average vs. High; M = Mean, SD = standard deviation, * = significant *p* –value < .001.

Table 19

Independent t Test for EC Index by initial English Language Proficiency

Low vs. Average	Low vs. High	Average vs. High
Low M = .16 SD = (.08)	Low M = .16 SD = (.08)	Average M = .40 SD = (.13)
Average M = .40 SD = (.13)	High M = .65 SD = (.08)	High M = .65 SD = (.08)
p - value .00*	*p* - value .00*	*p* – value .00*

Note. Three independent *t-test* comparisons in fall of kindergarten: Low vs Average, Low vs. High, and Average vs. High; M = Mean, SD = standard deviation, * = significant *p* –value < .001.

Post Hoc Tests. Post hoc tests of the initial English language proficiency group main effect revealed that the children with the highest initial English language proficiency (higher NDW values during the fall of kindergarten) had a significantly higher PSGE Index than the children in the Average and Low initial English language proficiency groups over time. Children in the Average initial English language proficiency group had a significantly higher proportion of story grammar elements than the children in the Low proficiency group.

Post hoc tests of the English language proficiency group main effect revealed that, across all six Waves, the children with the highest initial English language proficiency group (higher English NDW values during the fall of kindergarten) had a significantly higher EC Index than the children in the Average and Low initial English language proficiency groups. Similarly, children in the Average initial English language proficiency group had higher EC Index scores than children in the Low initial English language proficiency group (see Figure 17). Findings indicated that initial status significantly affected performance levels on the PSGE and EC Indices in the spring of second grade.

Research Question Five

Do differences in means on narrative macrostructure measured with PSGE and EC Indices between low-, average-, and high-language proficiency groups vary as a function of time?

Recall that the participants were divided into three initial English language proficiency groups based on their English NDW performance in the fall of kindergarten. The groups were Low, Average, or High and were used as a Group variable. The two

main effects were subsumed by significant Time x Group interaction. Results from separate two-way repeated measures ANOVA indicated significant Time x Group interactions for PSGE Index, [$F(8,819) = .182$, $p = .000$, $p\eta^2 = .16$] and EC Index, interaction [$F(9,869) = 3.31$, $p = .000$, $p\eta^2 = .03$].

PSGE Index and Graphical Results

The overall and individual trend lines of the PSGE Index for children in each group are presented in Figures 13, 14, 15, 16, and 17. Pairwise comparisons revealed that the groups were significantly different from each other at all periods except Wave 4 (end of first grade) and Wave 6 (end of second grade). At those times, group performance tended to converge such that the Low and Average initial English language proficiency groups performed similarly, but both continued to differ significantly from the High initial English language proficiency group. Results suggest that children in the Low group performed parallel to the Average group until the end of first grade. Then, they fell significantly behind over summer, demonstrated by a steeper trend in performance. The Low group improved enough to perform similarly to the Average initial English language proficiency group by the end of the following year. However, at all points in time, the children in the Low group told stories with fewer story elements than the children in the High group.

Upon visual inspection of the individual trend lines for each group, it appeared that the groups differed in the variability of performance on the PSGE Index. The Average group had the most amount of variability in the fall of kindergarten. In the spring of second grade, the Low and Average groups had similar variability and the High group demonstrated less variability than these groups. The

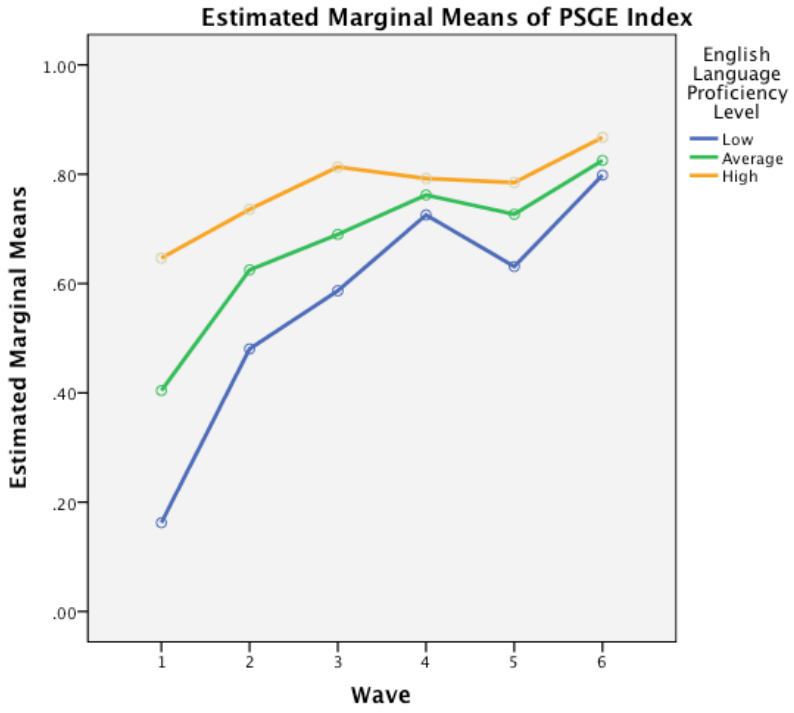


Figure 13. Scatterplot of PSGE Index Time x Group interaction.

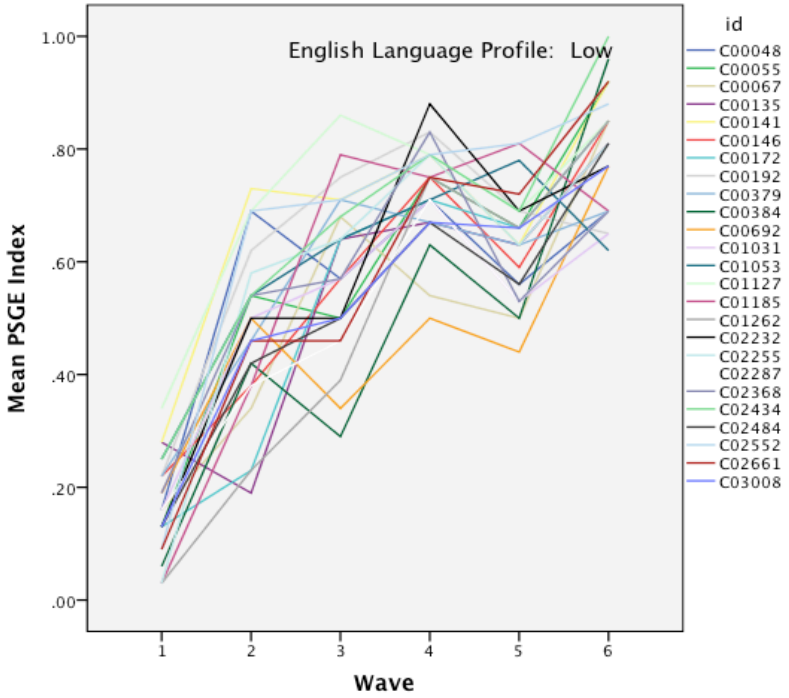


Figure 14. Individual trend lines for PSGE Index by Low English language profile.

amount of variability may be indicative of how stable the PSGE Index was for each of the groups.

EC Index and Graphical Results

The overall and individual trend lines of EC Index for children in each group are presented in Figures 18, 19, and 20. Pairwise comparisons revealed that the groups were significantly different from each other at all periods except Wave 4 (end of first grade) and Wave 6 (end of second grade). At Wave 4, the episodic complexity of the stories told by children in all three groups decreased. However, it appeared that the EC Index of the stories told by children in the High initial English language proficiency group decreased at a greater rate during the first grade year than the stories told by

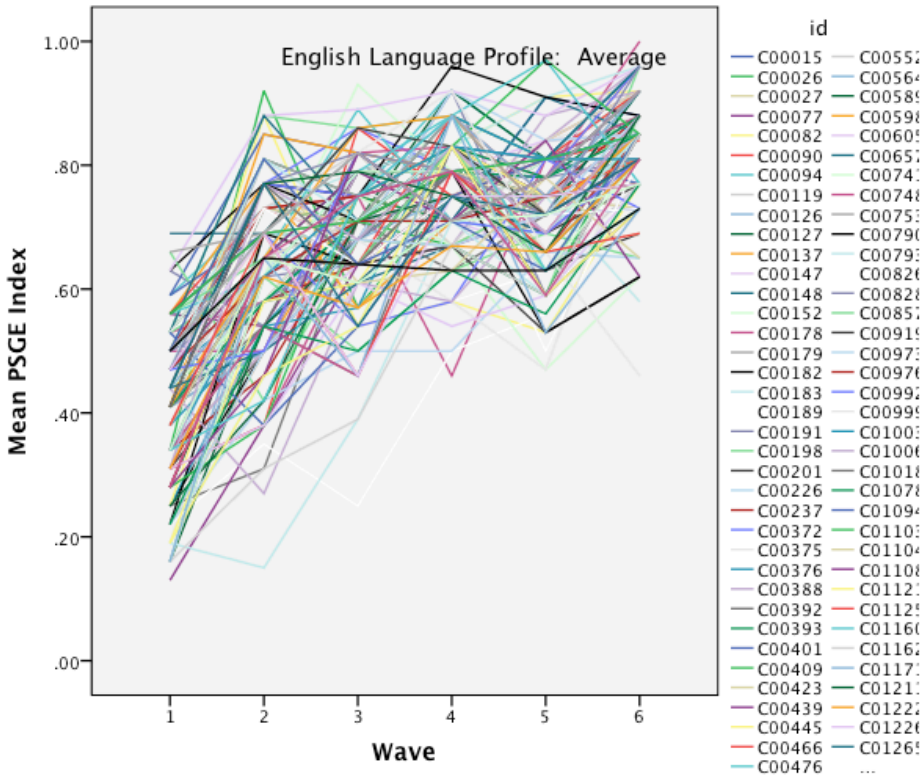


Figure 15. Individual trend lines for PSGE Index by Average English language profile.

the children in the Average and Low initial English language proficiency groups. At Wave 6 (the end of second grade), there were no significant differences between the groups. All three groups converged, with the Low group showing the steepest growth trajectory during the second grade (Wave 5 to 6). Regardless of which group the children were in at the beginning of kindergarten, all children performed similarly on the EC Index at the end of second grade.

Upon visual inspection of the individual trend lines for each group, it appeared that the groups differed in the variability of performance on the EC Index. The Low group had the smallest amount of variability in the fall of kindergarten. In the spring of second grade, the Low and Average groups had similar variability and the High group demonstrated less variability than these groups. The amount of variability may be indicative of how stable the EC Index was for each of the groups.

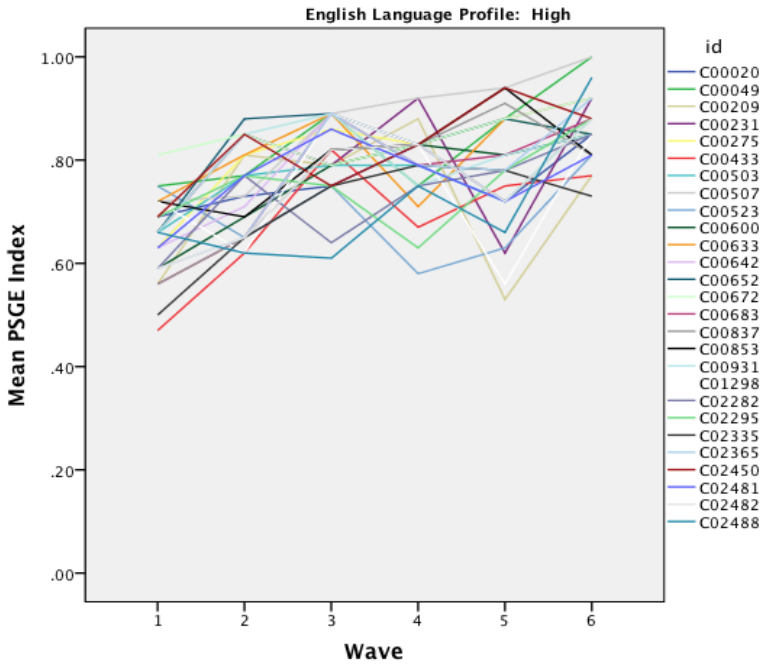


Figure 16. Individual trend lines for PSGE Index by High English language profile.

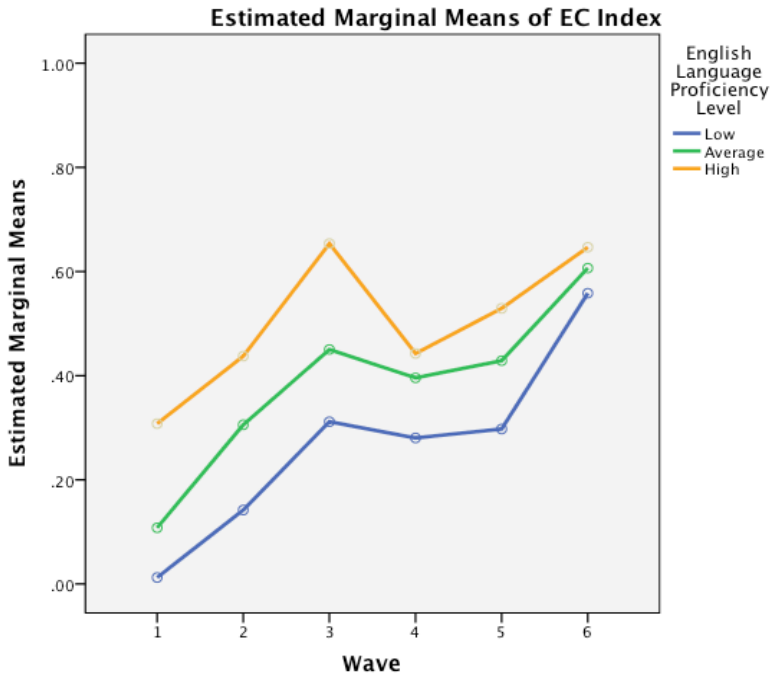


Figure 17. Scatterplot of EC Index Time x Group interaction.

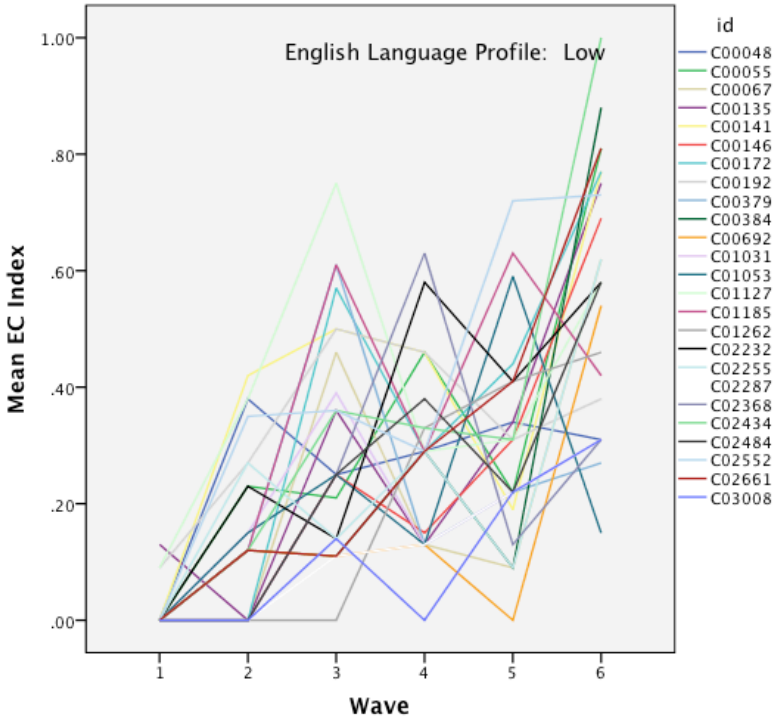


Figure 18. Individual trend lines for EC Index by Low English language profile.

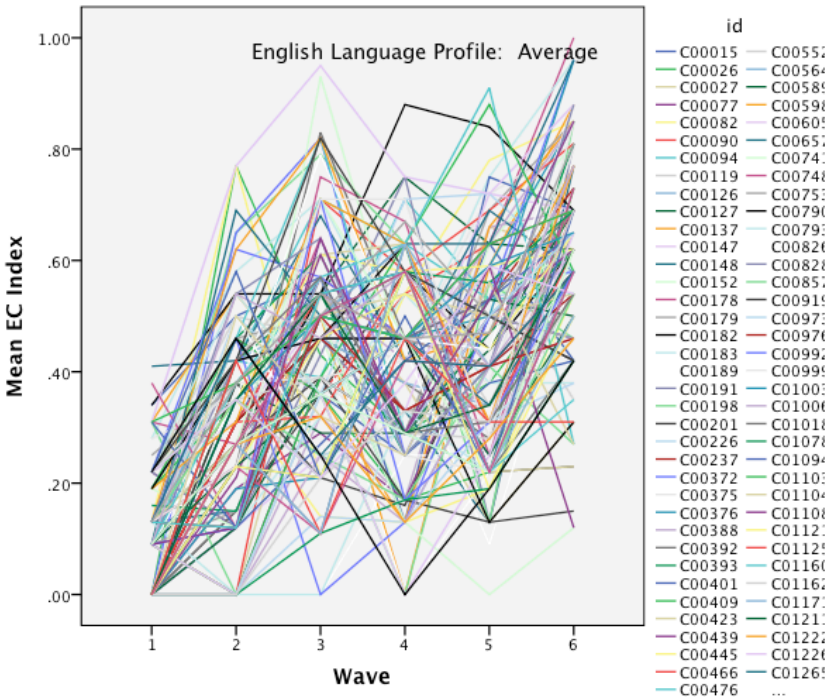


Figure 19. Individual trend lines for EC Index by Average English language profile.

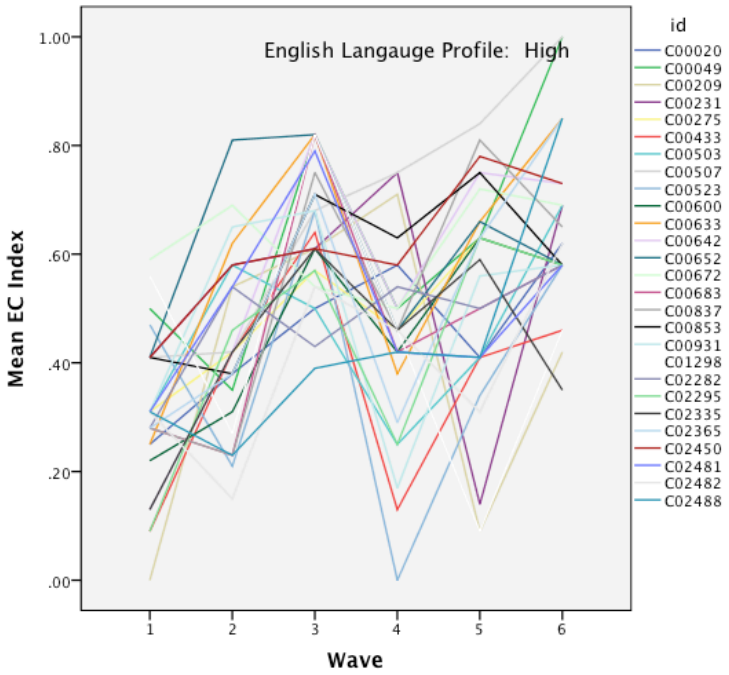


Figure 20. Individual trend lines for EC Index by High English language profile.

CHAPTER V

DISCUSSION

This study used a subset of data from BBVLDSC study to determine the narrative growth trajectories of the PSGE and EC Indices for SEBs from kindergarten through the end of second grade. The results of this research add to the SEB narrative literature because it employed a polychromic longitudinal design to examine narrative growth around episodic structure (initiating event, action, consequence). Specifically, the study was designed to measure and track the ability to recall story grammar elements and the ability to impose a causal structure on the elements. Furthermore, the large sample size is unique in that there is only one other study that used a polychromic assessment with a large sample ($N = 344$) to examine language and literacy skills, which is currently ongoing (Tabors et al., 2003). However, the Tabor et al. (2003) study did not examine story grammar elements. The findings from the current study will be presented in the context of the five research questions.

In the fall of kindergarten, the children began with similar English and Spanish language proficiency levels as measured by English and Spanish NDW. These results indicated that the children were bilingual learners (learning two languages either simultaneously or sequentially) who demonstrated similar language proficiency in both Spanish and English at this particular time (Genesee, Paradis, & Crago, 2004). The children performed higher on the ability to recall story grammar elements (PSGE Index) than the ability to impose an episodic structure on those elements (EC Index) during an English retell task. At the outset of the study, there were no significant gender differences on PSGE Index, EC Index, or English NDW. This means that the children

came to school in the fall of kindergarten with potentially similar experiences and exposure to English language and literacy skills.

Research Question One

Is there a distinct trajectory of growth (linearity, direction, continuity) in English narrative macrostructure as measured by PSGE and EC Indices?

The first research question focused on the English narrative growth of SEB children over time from fall of kindergarten through spring of second grade. Recall that the PSGE Index was a proportion of the total number of story elements that children reported during their retells that matched the model they were given. Therefore, another way to characterize the PSGE Index is that it was a measure of the number of relevant story details that children recalled. Recall that the EC Index was a measure of the ability of children to impose a structure on story grammar elements recalled.

Mean Trend Lines

Our results suggested that the mean English trend lines (see Figure 4) for PSGE and EC Indices were similar: close to linear, nonmonotonic (changing directions), and discontinuous (increases and decreases). The overall mean performance on the English PSGE and EC Indices increased from kindergarten through the end of second grade (see Figure 4). Interestingly, participants earned higher scores on the English PSGE Index than the English EC Index at all six time points. The growth for both measures was similar except during the time point between fall of first grade and fall of second grade when there were observable disparity between the indices. PSGE Index score was the highest ratio achieved until that point in time (fall of first grade). This difference in

English narrative performance is important in understanding the relationship between the PSGE and EC Indices and how these skills develop at different rates during this time frame.

One explanation for the different growth patterns between the two indices from fall of first grade through fall of second grade might have been due to competing available attentional resources the children were balancing as they were attending to the retell task. Skehan (1992, 1996) argued that there are three areas that compete for attentional resources for learners: fluency (using language, focusing on lexical systems), accuracy (avoiding errors and potentially avoiding challenging structures), and complexity/range (using more advanced language). Results from Skehan and Foster (1999) that examined the effects of inherent task structure and processing load on narrative retelling performance indicated the complexity of language was influenced by the processing load suggesting that complexity was affected by the processing demands of the condition. Thus, the greater the processing load required for an individual resulted in reduced complexity.

In the current study, children's performances on the PSGE and EC Indices from English retell tasks appeared to fluctuate around first grade, with one index increasing (PSGE) and the other decreasing (EC), indicating potential deliberate shifts in attentional resources from recalling the elements and imposing a structure upon them. In the beginning of the study during kindergarten, the children's performance on the PSGE and EC Indices during the English narrative retell task were parallel indicating they were allocating similar resources to recalling elements and using them to recall episodes. However, as language skills developed and children matured, it appeared that the ability

to remember additional elements was competing with the ability to impose structure on those elements as demonstrated in the disparity between performances from fall of first grade to fall of second grade. Developmentally, this is a time when children were expected to be using more complex language skills to impose a structure on story grammar elements and children were also expected to be recalling more story grammar elements. The results suggested that attentional resources may have been allocated to recalling additional elements; therefore, we saw reduced performance in the more complex language task of imposing structure on those elements. It is possible that as recalling elements required less processing and became more automatic, children were better able to organize elements into episodes. This pattern was seen at the fall of second grade when children's performance on PSGE and EC Indicies increased in parallel.

The increases and decreases in narrative language development that were exhibited in the trend lines for the English PSGE and EC Indices may be explained by a developmental theory other than a simple linear pattern of language development. Research conducted by Evans (2001) described an alternative to traditional developmental theories of language development called Emergentism, which refers to the language acquisition process as a "dynamically evolving state, which can be represented by probabilistic information" (Evans, 2001).

The Emergentism theory focuses on the learning mechanisms for language acquisition that is grounded in the combination of two language development models: connectionist modeling theory and dynamical systems theory. The connectionist portion of the Emergentism model refers to the specific neuronal connections that are made based on statistical and probabilistic information during naturally occurring spoken language

input. The dynamic systems portion of the Emergentism model refers to the changes in strength of the neuronal connections based on child – environment interactions. The individual's language abilities are a reflection of the interaction between the individual's dynamic exposure to language, environmental demands, and communicative intentions. The Emergentism theory predicts that language acquisition is characterized by periods of fluctuations and steady states rather than discernable linear, stage-like patterns. This is exactly what was observed for the PSGE and EC Indices over time.

This theory would explain the steady states and shifts in stability on the PSGE and EC Indices from fall of first grade through fall of second grade. For example, from fall of kindergarten through the fall of first grade there was a steady state of growth for both indices. Then, as there was an increase in performance on PSGE Index in the fall of first grade, there was period of instability (a loss in stability of a current behavior) in the EC Index. Another shift was exhibited in spring of first grade when there was a period of stability and growth in the EC Index and a period of instability in the current behavior (PSGE Index). After this period, there was another steady state for both indices from fall of second grade through spring of second grade.

The Emergentism theory suggests these fluctuations may be due to weaker neuronal connections or less well-established patterns that are more sensitive to external factors. They also may be due to other child – environment conditions where language is stable for a certain time and then becomes unstable under different circumstances, but over longer periods of time, a growth pattern is demonstrated (close to linear). For example, in the study, participant performance on the PSGE and EC Indices were stable and predictable until fall of first grade when there was an increase in the PSGE Index and

a decrease in EC Index. These fluctuations may be due to child – environment conditions such as exposure to isolated story grammar elements rather than exposure to elements as part of an episode. Then, from the spring of first grade through the fall of second grade an opposite pattern emerged. These fluctuations again may be due to differences in child – environment interactions. The Emergentism theory of language development requires enough (frequency and intensity) environmental language exposure for an individual to be able to identify patterns based on probability information.

Individual Trend Lines

There was a great deal of individual variation in growth for both indices over time (see Figures 5 and 6). This finding was not surprising given that children have a wide variety of different experiences with and exposure to English and Spanish languages prior to attending school (Iglesias & Rojas, 2012). For many children, kindergarten may have been their first formal schooling experience. It is not uncommon for some children to have had no structured experiences surrounding books prior to coming to school (Gutiérrez-Clellen, 2002; Gutiérrez-Clellen, Peña, & Quinn, 1995; Gutiérrez-Clellen & Quinn, 1993). Children who have limited exposure to literacy experiences at home may not be familiar with the use of a storybook as a prop to retell a story. All of these factors may influence a child's language and literacy skills to varying degrees and over different learning periods.

Another reason for variation in individual trend lines between children (see Figures 5 and 6) might be explained by the work of Connor and colleagues (2009, 2011) on the multiple dimensions of the classroom environmental model: child characteristics, foundational characteristics of the classroom environment, and the multiple dimensions

of instruction. Each child brings a different set of characteristics (e.g. language, literacy, self-regulation, social, home support) to the classroom. These differences have the potential to impact the child-to- teacher interaction and the child-to-peer interaction. Connor and colleagues' describe foundational elements of the classroom as the "teacher's warmth and responsiveness to students, classroom management and organization, discipline, and the social and emotional climate". Multiple dimension of instructional elements refers to "teacher-child interactions, context, and content." All of these elements suggest that each student in the same classroom may experience different learning opportunities, which in turn, are exhibited in the variances in individual trend lines. Therefore, it would be expected that the children would exhibit varying individual trend lines on the PSGE and EC Indices as was demonstrated in the study.

In summary, SEB children demonstrated distinct linear trends in the ability to recall story grammar elements and the ability to impose a structure on these elements when retelling English oral narratives in a gradual developmental process with some variability. The performance on the PSGE Index always was greater than the performance on the EC Index. Fluctuations in mean performance on both outcome measures were observed, which could be a result of varying attentional resources during the retell task or due to typical development from an Emergentism model of language development. Individual variation in performance on both measures may have been a result of exposure to the English language, familiarity with literacy tasks, or multiple dimensions of the classroom environment. Overall, the PSGE and EC Indices captured a distinct trajectory of English narrative development over a three-year period using a retell task.

Research Question Two

Do males and females earn different scores on narrative macrostructure as measured by PSGE and EC Indices across the six time points during kindergarten through second grade?

Question two focused on potential performance differences between males and females. Furthermore, if the correlation between the two indices is computed, both genders exhibited similar patterns. This is further support that gender did not differentiate performance on PSGE and EC Indices indicating gender may not address performance variation on the two outcome measures. Interestingly, gender was not a factor on narrative development outcome measures until the spring of the second year when females outperformed males on only the PSGE Index ($p = .05$). A similar pattern of results was found for the EC Index although this difference did not reach statistical significance ($p = .07$). A comparable trend was found for language productivity with females performing slightly higher than males ($p = .07$).

Another interesting result was found between genders on the variability in performance on PSGE and EC Indices when examined separately for males and females. The results indicated different patterns in variability on the PSGE Index and similar patterns on the EC Index.

The scatterplots and boxplots (in Appendix K) show that variability in PSGE Index performance in the fall of kindergarten was scattered for both males and females and by the fall of first grade we begin to see more stability (less variation) in the performances of males. By the spring of second grade, the females also demonstrated more of a clustered performance on the PSGE Index indicating more stability in their

ability to recall story grammar elements. The sooner children become more stable in their ability to recall story grammar elements, the sooner educators can make decisions about identifying children who may be at risk for recalling story grammar elements.

The scatterplots and boxplots (in Appendix L) show that variability in EC Index performance was scattered for both males and females from fall of kindergarten through spring of second grade indicating instability in imposing structure on story grammar elements. This would make sense as this skill requires the use of academic language and bilingual children take at least 4 to 7 years to acquire this type of language (Cummins, 1979). The differences in variability are important for determining growth patterns between genders.

When individual development trend lines in performance on PSGE and EC Indices are examined separately for males and females, the results indicate similar patterns in variability (see Figures 9 and 10). The individual trend-lines for males and females indicate a large variation of developmental patterns for both males and females on the PSGE and EC Indices. This is important in understanding the individual development of these skills based on gender. It is expected that both males and females would demonstrate a variety of growth patterns. For an educator, this variety poses challenges in identifying children who may be at-risk for recalling story grammar elements and imposing structure on these elements. Therefore, gender may not be the strongest indicator in predicting performance on PSGE and EC Indices.

Research from monolingual studies supports the explanation for the gender differences observed on the PSGE Index in the spring of second grade. Research studies that have examined early language skills comparing males and females typically yielded

results that demonstrated higher performance for females over males. This study showed similar gender differences if we frame the ability to recall story grammar elements as more of an isolated language skill (PSGE Index) in comparison to the ability to impose a structure on story grammar elements (EC Index) that requires integration of isolated language skills. This is one possible explanation as to why gender differences were apparent on the PSGE Index before the EC Index. The PSGE Index measures earlier developing language skills than the more complex skills of the EC Index. Developmentally, individual elements are recalled before episodic structure is produced (Hughes et al., 1997). Interestingly, gender differences on the PSGE and EC Indices became more apparent as children improved their English language proficiency skills as measured by NDW.

Another potential explanation for significant gender differences favoring females for the PSGE Index at the end of second grade ($p = .05$) and no significant difference on the EC Index at the end of second grade ($p = .07$) might be due to the artifact of the retelling task itself and/or how the narratives were evaluated. Nicolopoulou (1997) and Nicolopoulou and Richner (2004) suggested gender differences are more likely demonstrated when children's narratives are examined for how narratives are used as a cognitive tool to manage order and disorder, different images of social relations, and different conceptions for characters rather than relying solely on analyzing narratives for its story grammar structure. Typically, when narratives are examined using a sociocultural approach, narratives are elicited spontaneously, which allows for gender differences in telling narratives to be intensified. It is possible that there was not separation between genders until the end of second grade because the retell task forced

boys and girls to tell narratives that were similar in nature which may not have occurred had the narratives been collected under a spontaneous tell condition.

Nicolopoulou and Richner's (2004) study that examined spontaneous stories of young monolingual children around the age of 4 years and 7 months to determine how modes of storytelling (single and group authoring) promoted narrative development. Children were asked to tell stories individually and in groups. The narratives were evaluated for how characters were portrayed in relationship. Two gender-related narrative styles were produced in children's narratives. Recall that the EC Index measures the ability to impose an episodic structure on story grammar elements recalled. When children told spontaneous stories in the Nicolopoulou and Richner (2004) study, there were differences in the way males and females responded. Females tended to tell more coherent and continuous stories marked by imposing structure around stable and harmonious social relationships. For example, females often told stories around a family group and incorporated a home setting. Characters were typically fairy-tale characters such as kings and queen and told stories within a familial network of characters. Males told more disordered stories marked by movement and disruption and the absence of stable social relationships. Characters were usually more powerful and frightening such as large animals, monsters, or cartoon action heroes. They told stories with conflict, movement, and disruption with characters interaction during conflict.

The important point to glean from Nicolopoulou and Richner's (2004) study is that when children are given the opportunity to tell a spontaneous story as opposed to a retell, males and females used similar story grammar elements in their stories, which was measured as PSGE Index in the current study. However, gender differences were

observed in these stories when the stories were evaluated in the context of order, social relationships, and character portrayal. Nicolopoulou (1997) and Nicolopoulou and Richner (2004) would recommend adjusting the way narratives are evaluated to observe different gender narrative styles. The current study evaluated narratives by examining story grammar elements in an episodic structure and this might explain why the retelling task did not yield significant differences in the ability to impose structure on recalled elements (EC Index) between boys and girls.

The results from this study related to gender add to the literature by virtue of its focus on narration rather than early language development using only measures of language productivity. Even though different measures of language were used in this study in comparison to monolingual research, the findings from this study are consistent with monolingual research (Bornstein et al., 2004; Fenson et al., 1994) that demonstrated higher performance for females, albeit on isolated language skills. Interestingly, the monolingual female advantage for language skills attenuated around 3 years of age. The performance of young SEB males and females in this study demonstrated significant differences on their ability to recall story grammar elements at the end of second grade and trends favoring females on the ability to impose structure on story grammar elements recalled and language productivity (NDW) increasing from kindergarten through the end of second grade.

Research Question Three

Do SEB children earn different scores on narrative macrostructure as measured by PSGE and EC Indices across the six assessment periods during kindergarten through

second grade?

Research question three focused on the performance on both dependent variables (PSGE and EC Indices) over time from fall of kindergarten through spring of second grade. PSGE performance, a proportional measure of the number of story grammar elements children recalled from the model, was always higher than the EC Index or the ability to impose a structure on the elements recalled. Results indicated that children performed significantly different between each assessment period for the PSGE and EC Indices. Overall, children demonstrated a significant improvement (see Table 15 and 16) between each assessment period on four out of the five times between waves. Performance deflation for each index occurred between only one set of assessment periods: PSGE Index – between spring of first grade and fall of second grade (Summer 2) and between fall of first through spring of first grade for the EC Index (first grade).

Although performance on both indices increased over time, they demonstrated minimally different trends from fall of first grade through fall of second grade. There was a slight dip in the PSGE Index growth from spring of first grade to fall of second grade immediately after they demonstrated the largest gap between PSGE and EC Index scores. At the same time, they demonstrated a slight increase in EC Index scores suggesting a possible trade-off between recalling story elements and imposing story structure on these elements. These results indicate that narrative growth may not be completely linear and show temporary increases and decreases over time, especially since children continued to improve their narrative skills until the end of second grade.

Although both indices demonstrated similar trends, the amount of growth differed for each index. The most growth in performance on the PSGE Index occurred during

kindergarten (d = 1.4) and second grade (d = 1.0). The least amount of growth in the PSGE Index was observed during Summer 1 (Wave 2 to Wave 3; d = .52) and Summer 2 (Wave 4 to Wave 5, d = -.39).

The most growth in performance on the EC Index occurred during Summer 1 (d = 3.14) and second grade (d = 2.64). The least growth occurred during first grade (d = -3.14) when there was an actual loss and the smallest growth in Summer 2 (d = .20*)* on the EC Index. Interestingly, there was the least amount of growth that occurred during first grade when children's EC Index decreased, and during Summer 2.

Interestingly, the smallest amount of growth or loss on both indices occurred at different time points. These different times may be attributed to the relationship between recalling story grammar elements and the ability to impose a structure on these elements. The shift in the amount of growth may be due to the developmental patterns of young children who demonstrate changes in stability as discussed earlier (Evans, 2001). For example, recalling story grammar elements and imposing structure on these elements may be two different behaviors. These results suggest that we may expect fluctuations in skill for recalling story elements and the use of story structure rather than a clear linear trajectory in both over time. This is demonstrated in the performance observed on the EC Index where the smallest growth (an actual loss) occurred in first grade when memory tasks such as decoding and the ability to recall story grammar elements (PSGE Index) are typically emphasized rather than the ability to impose a structure on story grammar elements recalled (EC Index).

By measuring the amount of performance gained or lost allowed us to examine when these instances occurred. The results from the PSGE Index are in alignment and

results from the EC Index are in partial alignment with much of the literature regarding literacy skills that suggests children have the potential to lose skills over summer months (Allington & McGill-Franzen, 2013; Puma et al., 1997; Rojas & Iglesias, 2013). This loss of growth or deflated growth may be attributed to many variables such as exposure to language, environmental linguistic expectations over the summer, or limited exposure to academic tasks over the summer.

A potential reason for deflated performance on the EC Index during first grade may be due to the instructional shift in demands from kindergarten to first grade. As you recall, the EC Index measures the ability to impose a structure on story grammar elements recalled. Both CCSS.ELA-Literacy.RL.1.2 states that children should be expected to "retell stories, including key details, and demonstrate understanding of their central message or lesson" and CCSS.ELA-Literacy.RL.1.3 states that children should be expected to "describe characters, settings, and major events in a story, using key details" rely heavily on the ability to understand and produce narratives in first grade. However, it is possible that first grade instruction may focus more heavily on decoding as CCSS.ELA-Literacy.RF.1.3 states that children are expected to "know and apply grade-level phonics and word analysis skills in decoding words" as it is the time where most children "learn to read". This shift in instructional focus may explain the dip exhibited in the EC Index in first grade. The instruction may focus more on decoding skills rather than understanding and producing narratives, which has the potential to impact the ability to impose structure on story grammar elements (EC Index).

Furthermore, there typically is less contextual support provided in first grade, which would impact the performance on an already complex language skill such as

integrated isolated language skills into a narrative. It is also possible that first grade classroom instruction might consist more of teaching isolated story grammar elements rather than integrating these elements into episodes, which would aid the recall of story grammar elements (PSGE Index) rather than the ability to impose a structure on the elements (EC Index).

Attempting to explain why there were times of deflated growth or loss would be helpful in understanding developmental growth patterns, which may also be related to classroom instruction. These results indicate that young SEB children have the potential to lose narrative skills during summer vacation. This loss has the potential to influence future language and literacy skills and may place these children at-risk for academic failure. Maintaining narrative skills over the summer may be a priority of schools by implementing summer reading programs. There is also something that affects learning in first grade. Further investigation is warranted to examine a plethora of reasons why deflated or loss of growth during first grade on the EC Index were observed.

Research Question Four

Do SEB children with low, average, or high language proficiency earn different narrative macrostructure scores measured with PSGE and EC Indices?

The fourth research question focused on whether the initial English language proficiency skills at the outset of the study measured by English NDW performance during fall of kindergarten affected narrative skills (PSGE and EC Indices). Children were assigned a language proficiency level of Low, Average, or High. Results indicated significant differences on both PSGE and EC Index with the High group always

outperforming the Average and Low groups and the Average group always outperforming the Low group.

Research has been conducted examining the language skills necessary to shift from home to school. Children whose language experiences at home match language and academic experiences at school typically perform better in school (Heath, 1983; Iglesias, 1985). Therefore, it is possible that children who have higher initial English language proficiency in kindergarten have experienced tasks that would be similar to the academic setting. These findings suggested that the level of English language proficiency skills children came to school with in the fall of kindergarten had the potential to impact narrative growth. Results may indicate the importance of factors that may affect English language proficiency such as early exposure to English and English literacy skills.

When the variability in performance on PSGE and EC Indices is examined separately for children with different initial English language proficiency, the results indicated different patterns in variability. The scatterplots (in Appendix K) show that there was less variability in PSGE Index performance in the fall of kindergarten for children in the Low and High groups and there was greater variability for children who were in the Average group. In the spring of second grade, the children in all groups demonstrated similar variability in performance. These results indicate that in the fall of kindergarten, children's English narrative experiences may have been more similar. In the spring of second grade, all groups demonstrated a greater variability possibly indicating that there were a variety of factors that may have influenced their English language and narrative experiences over the three years.

For example, Reese, Linan Thompson, and Goldenberg (2008) found that community characteristics had the potential to impact language and literacy experiences. Reese et al. (2008) examined language use, literacy, language of literacy, and frequency of adult or older siblings literacy experiences of children living in predominately Latino communities in California and Texas. Results indicated moderate correlations between community poverty, Latino population, language use, and community education level and children's home language and literacy experiences. Furthermore, a large Latino population was associated with community-level poverty, children speaking more Spanish than English, and less literacy experiences. In contrast, communities with larger English speakers were associated with children speaking more English than Spanish and more literacy experiences. This study supports the idea that children with more English language experiences would perform higher on literacy tasks. Children in the current study with higher initial English language proficiency would be expected to perform better on narrative tasks than children with lower initial English language proficiency.

The scatterplots (in Appendix N) show that variability in EC Index performance in the fall of kindergarten was larger for children in the Average and High groups in the fall of kindergarten. In the spring of second grade, all three groups demonstrated similar variability. The Low group demonstrated similar variability and performance to the Average and High groups at Wave 6. This indicates that the children with Low initial English language proficiency demonstrated more instability in skill in imposing structure on story grammar elements they recalled. It is possible that this variability was influenced by their improved language skills, exposure to the task in the school setting, and the time it takes to develop this skill. The variability in findings for the PSGE and

EC Indices are important in understanding that many factors have the potential to influence growth in the PSGE and EC Indices, which affect all levels of initial language proficiency.

These findings are similar to initial language status studies by Rice, Wexler, and Hershberger (1988) and Rice, Redmond, and Hoffman (2006) who found initial status impacted growth trajectories. In Rice et al. (1988), researchers found that the initial status for verb tense marking was significantly different between typically developing (TD) children and children with specific language impairment (SLI) favoring the TD children and that this difference was maintained over time. Similar to Rice et al. (1988, 2006), results from the current study indicated initial status had the potential to impact growth trajectories of children with different language proficiency levels.

In a follow-up study, Rice et al. (2006) examined mean length of utterance (MLU) and vocabulary in children with SLI and children who were TD to determine language growth trajectories. The TD children began with higher intellectual functioning on the Columbia Mental Maturity Scale, MLU in morphemes, MLU in words, developmental sentence scoring (DSS), and index of productive syntax (IPSyn). The children with SLI started with a larger raw vocabulary score (PPVT-R). Findings indicated that MLU and vocabulary for these two groups differed at onset and in the rates of growth. The children in the TD group started the study with higher performance on the MLU in morphemes measure. At the end of the 5 years, the SLI children caught up and minimally surpassed the typically developing children. For vocabulary, although the TD children had a lower average vocabulary score, over five years they demonstrated a faster growth rate and outperformed the SLI children. These findings confirm the

findings from the current study that children with lower English language proficiency would exhibit lower skills than children who have more language proficiency.

In summary, oral language proficiency has the potential to impact the narrative development of both monolingual and bilingual speakers since producing narratives is a highly complex language skill. Studies have found that different oral language proficiency levels at a young age impact language and literacy developmental patterns. There are several reasons why SEB children may begin formal schooling with different English oral language proficiency. For example, the English proficiency levels in the home environment may not match the levels in the school environment, leaving the SEB child with limited English oral language English exposure and/or unfamiliar with academic tasks. Performance on initial English oral proficiency may be indicative of identifying children with lower English oral language who may have difficulty with language skills in general. It appears that oral language proficiency may play a predictive role in literacy tasks such as producing narratives.

Research Question Five

Do differences in means on narrative macrostructure measured with PSGE and EC Indices between low-, average-, and high-language proficiency groups vary as a function of time?

The fifth research question examined the long-term effect of initial language proficiency group over time. Narrative development over time was significantly affected by a child's initial English language proficiency level. All language proficiency groups (Low, Average, High) performed significantly different from each other on both PSGE

and EC Indices at all Waves except where performance converged at Wave 4 (end of first grade) and Wave 6 (end of second grade).

At Wave 4 and Wave 6, performance on the PSGE Index for the Low and Average groups were similar, but both continued to differ significantly from the High Group. Children in the Low and Average groups told stories with fewer story elements than the children in the High Group from kindergarten through second grade. By the end of second grade, children who began with higher initial English language proficiency significantly outperformed children with Average and Low English language proficiency. This further illustrates the idea that it is difficult for children who have lower language skills at a young age to catch up with their higher performing peers (Hart & Risley, 1995).

At Wave 4, performance on the EC Index for the Low group differed significantly from the Average and High groups. The Average and High groups did not significantly differ. At Wave 6, all group performances were not significantly different. Interestingly, it appeared that the ability to impose structure on story grammar elements may have started differently in the fall of kindergarten, but over time, children of all English language proficiency levels performed at the same level in the spring of second grade.

One explanation for this pattern of performance may be due to the level of experience with and exposure to English language and English literacy activities that children had prior to entering school. It is possible that the children in the Low, Average, and High groups may have had different exposure to and experiences with English language before entering kindergarten. Children with more exposure and/or experiences

would have higher English language proficiency levels than children with less experience.

Further, it was no surprise that scores related to the ability to recall story grammar elements (PSGE Index) were higher than scores for the ability to impose structure on those elements (EC Index). As previously discussed, recalling story grammar elements requires the use of isolated language skills and children do not necessarily need to use academic language to report them. Recalling details may be more in alignment with the kinds of skills that may be described as basic interpersonal skills (BICS; Cummins, 1979). The individual is using basic communication skills to recall elements, an isolated language skill. The children with higher English language proficiency will also demonstrate higher basic communication skills. Recall that the EC Index requires children to integrate isolated language skills. This skill might be described as cognitive academic language proficiency (CALPS; Cummins, 1979).

If it takes children around 2 to 5 years to become proficient in English language and a minimum of 4 to 7 years to be proficient in academic language skills, children with higher levels of English will eventually perform better on academic narrative tasks such as the EC Index. This is why children with higher initial English language proficiency might perform better than children with less initial English proficiency on the PSGE Index. Furthermore, it explains why there were no significant differences on the EC Index because it takes longer to acquire academic language skills and all children are still acquiring those skills.

Also, it would be expected that children's performance on the PSGE Index would be higher than the EC Index because children use isolated story grammar elements before

imposing structure on them (Glenn & Stein, 1980; Hedberg & Westby, 1983; Hughes et al., 1997; Liles, 1987; Peterson & McCabe, 1983). For example, preschool children typically tell descriptive (character), action (action), and reactive (series of actions) narratives with story grammar elements that do not demonstrate causal relationships between each other. As children mature, they begin to tell narratives with a resemblance of an episode about six years of age using abbreviated or incomplete episodes. At seven to eight years of age, children begin to impose a structure on the story grammar elements demonstrating causal relationships between them and containing elements such as *initiating event, action,* and *consequence* (Glenn & Stein, 1980; Hedberg & Westby, 1983; Hughes et al., 1997). Furthermore, the higher initial English language proficiency group would be expected to outperform children with less initial English language proficiency on the EC Index.

Another explanation for the similar performance by the end of second grade on the EC Index could also have been attributed to exposure to English literacy skills during the academic school year. It is quite possible that the children had a lot of exposure to this task during the academic school year and that mitigated the differences between the English language proficiency groups. The implication of this is that especially children in the Low and Average group may have benefitted from attending school rather than the time away from school as demonstrated in their ability to impose structure similar to the High proficiency group after three years of schooling. The High group demonstrated the steepest loss during first grade, which may have been attributed to the amount of language they were using in comparison to the other two groups. This may indicate that

fluctuations in growth may be more sensitive and easier to detect in the High group because they are using more language.

Oral language proficiency plays a significant role in the development of language and literacy skills, especially for those who are learning a second language (Lesaux & Geva, 2006). There are several aspects that contribute to oral language proficiency including phonological processing, word-level skills, and text-level skills (Lesaux & Geva, 2006). Phonological processing refers to the ability to use the sounds of language to process oral and written language, which have an impact on the ability to understand and produce narratives. Word-level skills refer to the ability to match sounds to written letters and "decode" print. Text-level skills refer to the ability to comprehend what one reads. This involves several skills such as vocabulary knowledge, background knowledge, and syntax knowledge. Many factors contribute to oral language proficiency and affect the rate and growth trajectories of language and literacy development. It is expected that the ability to understand and produce narratives require oral language proficiency. Therefore, one would anticipate children with lower English language proficiency to have difficulty retelling narratives just as was demonstrated in the current study.

In summary, initial English oral language proficiency in kindergarten was a factor that impacted narrative development over time. Overall, children in the study who were identified as having Low initial English proficiency performed lower than the High initial English language proficiency group on the PSGE and EC Indices. By the end of second grade, children who were identified as having Average initial English language proficiency group performed significantly lower than the High initial English language

proficiency group and were significantly different than the Low initial English proficiency group on the EC Index. Children who had higher initial language proficiency than a lower initial language proficiency group always performed better on the PSGE and EC Indices. Furthermore, the level of initial English proficiency level in fall of kindergarten was able to inform the performance on the PSGE and EC Indices by the spring of second grade.

Limitations

There were a couple of limitations to this study. As you may recall, one of the inclusion criterion for the participants was that they needed to have told stories in English and Spanish at all six assessment periods. This sub-sample may be biased toward students who perform better academically because they provided narratives in Spanish and English at all 6 waves.

Another limitation to the study is that narratives were evaluated during a recall task which may not be the best way to determine narrative knowledge because the story was imposed on the participants requiring them to remember how much was told to them rather than finding out what they are able to do on their own. The implication of this is that narrative retell tasks may be a better task for evaluating a child's ability to recall facts rather than a child's knowledge of story structure or use of a complete or complex episodes.

Implications

Findings from this study have the potential to inform the literature on English language development for SEB children. It also apprises educators on the development

of English narrative language skills of SEB children and informs which instructional content could be emphasized and when it might be necessary to implement language and literacy intervention or additional services for young SEB children in kindergarten through second grade.

Specifically, we learned that there were distinct trajectories on the children's ability to recall elements from a story and to impose a structure on the elements recalled. The mean PSGE Index and EC Index increased from fall of kindergarten to spring of second grade indicating they followed a developmental pattern. Recall that the sample of participants was evenly split between children who attended English immersion and transitional bilingual programs. Over time, young SEB children improved their mean performance on English oral narrative skills (PSGE and EC Indices) regardless of the type of language instruction they were receiving (English immersion or transitional bilingual).

Interestingly, the distinct developmental mean trend lines for PSGE and EC Index were similar. However, the trend lines were parallel with the ability to recall story elements (PSGE Index) always higher than the ability to impose a structure on the elements recalled (EC Index). The difference between performances on these measures indicates that the ability to recall story grammar elements and the ability to impose structure on story grammar elements appear to be two different skills. This reminds educators and researchers to identify the purpose of what is being taught and measured.

Examining the individual trend lines on the PSGE Index, which required children to recall elements, did not necessarily differentiate children's performance at the end of second grade because all children increased their performance from fall of kindergarten

through spring of second grade. Individual trend lines on the EC Index, which required children to impose a structure on story grammar elements, appeared to differentiate performance between children because not all children increased their performance by the end of second grade. The EC Index may be used as an early target to predict later academic performance. This information may also inform instruction to include the ability to identify and produce story grammar elements and to emphasize teaching how to impose a structure on story grammar elements.

Although children improved their oral English narrative skills from kindergarten through second grade, findings revealed that we would expect to see fluctuations in growth on both indices. There are many factors that may contribute to these fluctuations. For example, children come to school with a variety of language and literacy experiences. It appears that these experiences influence the initial performance on narrative outcome measures (PSGE and EC Indices) at the outset of academic schooling (kindergarten).

Another contributing factor to fluctuations may be due to the child's initial English oral language proficiency. Children at all levels (Low, Average, High) of initial English language proficiency in kindergarten improved their performance on narrative outcome measures over time. However, children with lower initial English language proficiency did not catch up to children who had higher level of initial English language proficiency on the PSGE Index. This may have an impact on determining how quickly educators may or may not need to intervene with students who may be at-risk.

The decision to provide extra academic support for a child should consider each child's individual exposure to English, exposure to literacy tasks, and overall language performance. This is important for recognizing that children who have lower English

language skills may not catch up to their higher performing peers in literacy skills and intervention would be warranted. These children may need additional assistance in both language and literacy skills to reduce their chances of staying at-risk or for being a low performer on literacy tasks. It is also important to differentiate children who exhibit natural fluctuations during development.

Another implication of this study is that young SEB children require time to develop stable narrative language skills. Caution should be taken not to identify these children as requiring additional services if they are continuing to acquire narrative language skills overall or if there is fluctuation and variation in skills with overall increases over time. The individual developmental trend lines demonstrated that we would expect to see a lot of variation between children on their performance for recalling story grammar elements and imposing a structure on these elements. This is important because educators may not be able to identify a particular learning pattern for all children as demonstrated in the variability in performance on the PSGE and EC Indices.

Results indicated that gender did not significantly affect growth rates on most language productivity and narrative skill measures (PSGE Index from Wave 1 to Wave 5, EC Index, and English NDW) for young SEB children. However, at the end of second grade, as males and females increased their English oral language proficiency, performance on narrative outcome measures were more sensitive to significant gender differences, especially on the ability to recall story grammar elements (PSGE Index). This implies that as children improve their basic communication skills and academic language proficiency skills, we are more likely to see performance differences by gender, in favor of females, on narrative outcome measures.

In summary, evaluating the ability to recall story grammar elements and impose a structure on the story grammar elements from a narrative retell task in English has informed educators and researchers on the English oral narrative development for young SEB children. This is particularly important, as oral narratives are a predictor of later academic success. With school demographics changing, it is imperative that educators and researchers meet the needs of young SEB children and set appropriate expectations.

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APPENDICES

Appendix A

Studies Examining Fictional Narratives of Spanish-English Bilinguals (SEBs)

Studies Examining Fictional Narratives of Spanish-English Bilinguals (SEBs)

Study (N)	Grade or Age	Dependent Variables (DV)	Assessment Times
Álvarez, E. (2003). N = 1 Barcelona, Spain	6;11 to 10;11	•Adequate first mention of animate characters. •First mention of inanimate objects.	Polychronic Narratives collected at ages of 6;11, 7;11, 8;11, 9;11, and 10;11.
Fiestas, C. & Peña, E. (2004). N = 12 Texas (central)	4;0 to 6;11	•Story Grammar (overall complexity and story elements) •Language productivity (number of C-units, MLC-words, and number of words) •Grammaticality*	Monochronic 2 sessions (one in English, one in Spanish) over a 2- to 4-week period.
Gutiérrez -Clellen, V. (2002). N = 33 California (southern)	2nd grade 7 to 8 years	Story Comprehension • Facts • Inferences Story Recall •Propositions •Related inferences •Unrelated inferences	Monochronic 2 sessions within a one-week period.
Montanari, S. (2004). N = 3 Los Angeles, CA (2 primary schools in Van Nuys community, northeastern section of LA)	5;4 (Henry) 5;6 (Laura) 5;8 (Peter)	Narrative Scoring System •*Ideational Function* •*Interpersonal Function* •*Textual Function*	Diachronic 2 different times over a 6-month span.
Muñoz, M., Gillam, R., Peña, E., & Gulley-Faehnle, A. (2003). N = 24 Texas Cross-sectional sample	Younger Group 4 years (n=12) Older Group 5 years (n=12)	Productivity •Total number of words •Total number of different words Sentence Organization •Number of C units •Mean length of C units in words •Percentage of C units that were grammatically acceptable Story Grammar •Frequency of occurrence for each story grammar proposition (setting, initiating event, attempt, plan, internal response, reaction, consequence).	Monochronic 1 session

Pearson (2002). N = 240 Cross-sectional longitudinal	2nd & 5th graders	Oral Language •Fluency •Vocabulary •Morphosyntax (elaborated verb phrases, complex adverbials, sentence embedding) Narratives •Story structure, orientation, flow of information, evaluative/affective information, metacognitive statements ,and temporal links.	Monochronic Cross-sectional sample
Peña, E., Gillam, R., Malek, M., Ruiz-Felter, R., Resendiz, M., Fiestas, C., & Sabel, T. (2006). N = 71 (Experiment 2) Texas (central) and California (southern)	1st grade 2nd grade	Story Components •Setting: Time and Place •Character Information •Causal Relationships •Temporal Order of Events Story Ideas and Language •Complexity of Ideas •Knowledge of Dialogue •Complexity of Vocabulary •Grammatical Complexity •Creativity Episode Structures •Combinations of various story grammar elements	Diachronic Pre to Post-Dynamic assessment (Children were given 2, 30min-sessions of mediated learning experiences (MLE)).
Schoenbrodt, L., Kerins, M. & Gesell, J. (2003). N = 12 Baltimore, Maryland	6 to 11 years	Communicative Competencies •Communication units •Words •Clauses •Story Grammar 11 questions based on Merritt & Liles (1987). •Narrative Style 11 questions based on Hutson-Nechkash (1990) and Merritt & Liles (1987).	Diachronic Pre/post 8 weeks
Squires, K., Gillam, R., Lugo-Neris, M., Peña, E., Bedore, L. (2013). N = 21 Texas	Kindergarten to first grade	Macrostructure •Character •Setting •Initiating Event •Plan •Action •Consequence •Internal Response Microstructure •Coordinating conjunctions •Subordinating conjunctions •Mental-linguistic verbs	Diachronic Kindergarten to first grade 2 data points.

		•Adverbs •Elaborated noun phrases	
Tabors, Páez, & López, (2003). N = 344	4 years old Pre-K	• Phonological awareness • Vocabulary • Letter and Word Recognition • Writing and Spelling • General Language Ability • Discourse Skill • Concepts about print, listening comprehension, story retelling, and decoding	Polychronic Pre-K to 2nd grade This study reports data from fall of pre-K
Uccelli, P. & Páez, M. (2007). N = 24 Massachusetts (3 communities) & Maryland (1 community)	Kindergarten Mean age 5.58 1st grade Mean age 6.57	Expressive Vocabulary •Picture Vocabulary in English and Spanish (from Woodcock Language Proficiency) Narrative Productivity •Total number of words •Total number of different words Narrative Quality •Total Narrative Quality (Story Score plus Language Score)	Diachronic Kindergarten to first grade Time 1 (end of K) Time 2 (end of 1st grade)

Appendix B

Scatterplots of Fall Assessments

Scatterplots of Fall Assessments

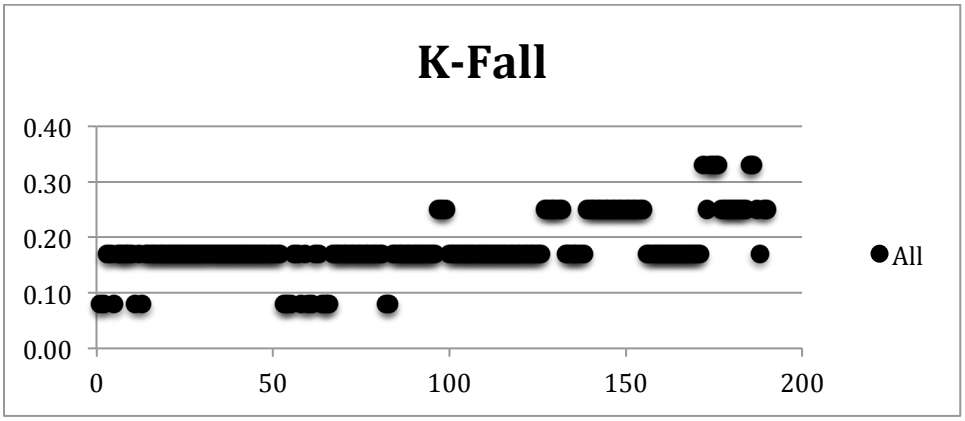


Figure 1. Time of Kindergarten fall assessments for all participants. Time ranged from August to December. Assessment times included September (.08), October (.17), November (.25), and December (.33). The average time of assessment was in the month of October.

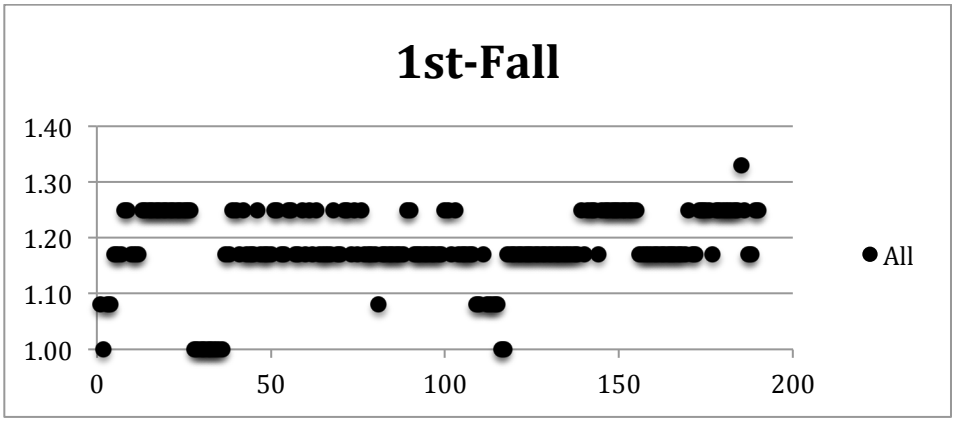


Figure 2. Time of 1st grade fall assessments for all participants. Time ranged from August to December. Assessment times included August (1.00) September (1.08), October (1.17), November (1.25), and December (1.33). The average time of assessment was in the month of October.

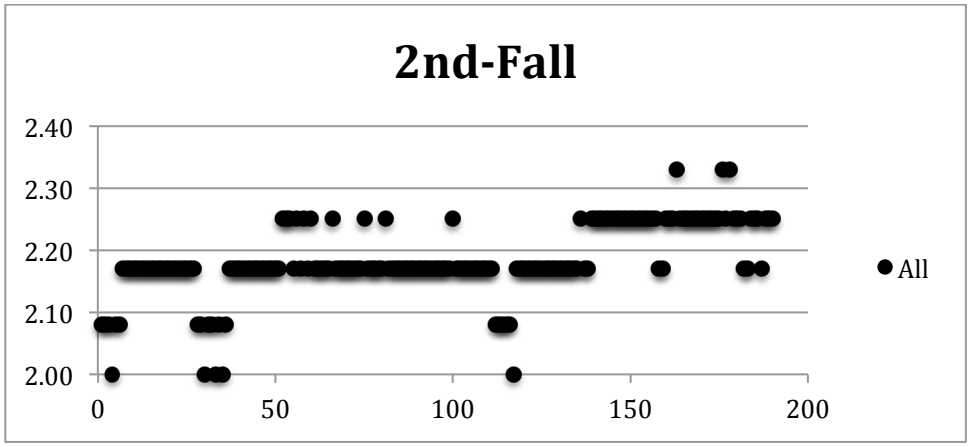


Figure 3. Time of 2nd grade fall assessments for all participants. Time ranged from August to December. Assessment times included August (2.00) September (2.08), October (2.17), November (2.25), and December (2.33). The average time of assessment was in the month of October.

Appendix C

Scatterplots of Spring Assessments

Scatterplots of Spring Assessments

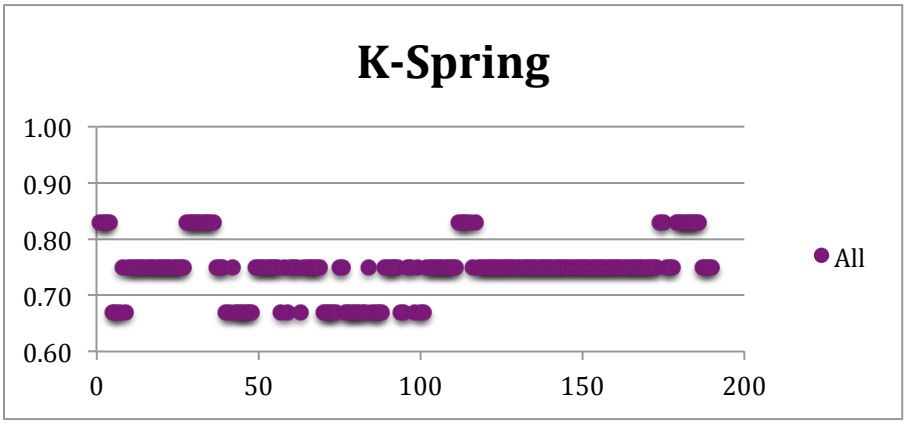


Figure 1. Time of Kindergarten spring assessments for all participants. Time ranged from April to July. Assessment times included April (.67), May (.75), June (.83), and July (.92), The average time of assessment was in the month of May.

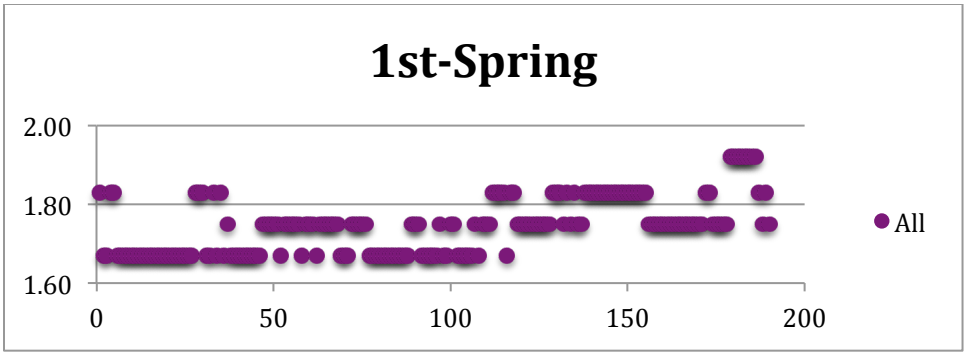


Figure 2. Time of 1st grade spring assessments for all participants. Time ranged from April to July. Assessment times included April (1.67), May (1.75), June (1.83), and July (1.92). The average time of assessment was in the month of May.

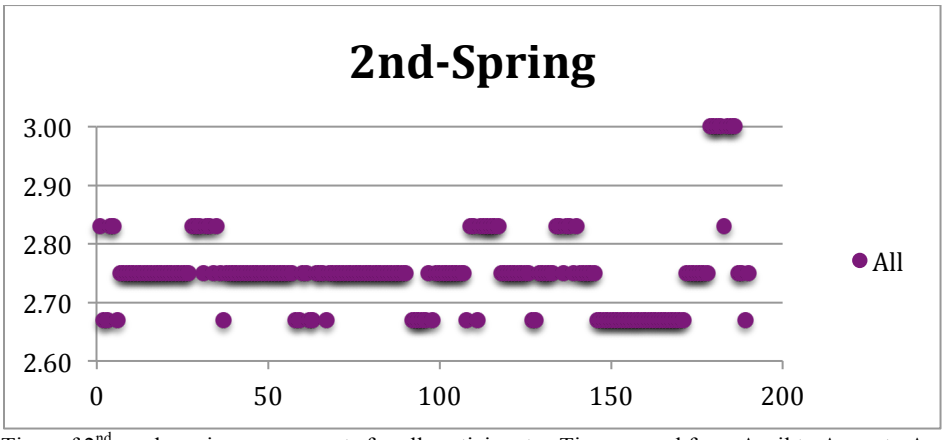


Figure 3. Time of 2nd grade spring assessments for all participants. Time ranged from April to August. Assessment times included April (2.67), May (2.75), June (2.83), July (2.92), and August (3.00). The average time of assessment was in the month of May.

Appendix D

Frog Story Rubric Development

Frog Story Rubric Development

Step One. We reviewed literature to identify developmentally appropriate elements. When children are in kindergarten through 2nd grade, they tell begin to tell true fictional narratives rather than complex narratives (Hughes, et al., 1997; Paul, 2007). We distilled all of the story grammar elements to align with the story model and the most essential developmental elements of initiating event, action/attempt, and consequence. The current rubric contains a sub-category of action called *obstacle*. An obstacle refers to an action that gets in the way of the character's goal during an episode.

Step Two. The author (Scorer 1) of this proposed study and a Spanish-English bilingual colleague (Scorer 2) met to create a rubric for each of the *Frog* stories. Initially, our goal was to first determine which story grammar elements we wanted to include in the rubric. We reviewed all of the story grammar elements that are based on story grammar structures by Stein and Glenn (1979), Mandler and Johnson (1977), and Merrit and Liles (1987) and those that are commonly used to describe children's narratives. Those elements include: *setting, initiating event, internal response, actions,* and *consequence (*Merritt & Liles, 1987; Stein & Glenn, 1979; Stevens, Van Meter, & Warcholak, 2010; Westerveld & Gillon, 2008). We reviewed the story retell model (www.saltsoftware.com) used to elicit narratives in the parent study and identified episodes contained in the model. Many scholars agree that the episode is the most basic and essential unit of a story and consists of a goal/complication/initiating event, action or attempt to achieve the goal, and an outcome or consequence (Le et al., 2011; Peterson & McCabe, 1983; Schneider & Vis Dube, 2005; Trabasso & Nickels, 1992).

Step Three. After we determined which elements we wanted to use in the rubric, each *Frog* book was reviewed examining the pictures along with the script that was administered during the narrative retell task. We divided episodes into two categories. The first category was a *primary* episode, which referred to the overarching episode of the book. This always included three elements: initiating event, action, and consequence. For example, "the boy goes to the park with his pets" (initiating event), "the frog explores the park on his own and has a lot of adventures" (action), and "the frog lay in the boy's arms because he was tired from all of his adventures" or "he was happy to be back with his friends." The second category of episode we included was a *secondary* episode. The secondary episodes included three to five elements but always included the structure of a basic episode (initiating event, action, and consequence). For example, "a boy and his pets went to the park" (initiating event), "the frog jumped out of the bucket" (action), and "the frog waved goodbye to his friends as they walked away". The additional one or two elements were either actions or obstacles. For example, "the frog came upon some flowers (initiating event), "all of a sudden he snapped his tongue high into the flowers" (action 1), "and he caught a big tasty bug for his lunch" (action 2), "the bug was a bumblebee (obstacle), and "it stung the frog on his tongue" (consequence). Each secondary episode had only one initiating event and one consequence. Secondary episodes were the bulk of the book.

Step Four. We calculated inter-rater reliability of the rubrics by scoring data elicited from 42 SEB children who were ages 5-12. Three Scorers scored narrative retells of *One Frog Too Many* (Mayer & Mayer, 1975) until 90% reliability was reached. Initially, Scorer 1 and Scorer 2 scored ten transcripts with 84% reliability on

macrostructure elements. Scorer 1 and Scorer 2, who designed the rubrics, met to discuss discrepancies and made necessary adjustments to the rubrics. A small portion of episode elements were redefined and information salient to the episode was bolded as key points necessary to score the point for the element. A scoring procedure manual was created to address issues that arose while Scorer 1 and Scorer 2 were resolving discrepancies. For example, the verb "eat" was added to the scoring procedure after the two Scorers agreed they would accept "the big frog eat the little frog leg" as an initiating event in *One Frog Too* Many. See Appendix F for a sample of a specific secondary episodes scoring procedures for a *Frog* story. A "question and answer" section was also added to the scoring procedures for general questions that spanned across all of the *Frog* stories. Scorer 1 and 2 scored four transcripts with 84% reliability. Scorer 1 and Scorer 2 met to discuss discrepancies and made adjustments to the rubric such as accepting "bite" and "hurt" in Episode 1. Scorer 1 and Scorer 2 coded four more transcripts with 84% reliability. Scoring procedure instructions was created to address general scoring issues.

Step Five. After Scorer 1 and Scorer 2 felt comfortable with the elements and the rubric, Scorer 1 trained a monolingual English graduate student in speech language pathology who has worked on projects with *Frog* stories previously (Scorer 3). Scorer 1 reviewed the scoring procedures and the rubric with Scorer 3. Training addressed information utilized to determine which elements would be acceptable if presented with a general idea while others required more specific information to be awarded the point for an element and whether or not elements needed to be in order or related or whether a mention of the element would suffice as a correct response.

Scorer 1 and Scorer 3 scored four different transcripts using the revised rubric with 84% reliability. At this time, a "Q & A" section was added to the scoring procedures. Scorer 1 and Scorer 3 coded four different transcripts using the revised scoring procedures and rubric with 84% reliability. Scorer 1 and Scorer 3 met to resolve discrepancies. The scoring procedures were refined to include each episode and the salient scoring points with examples. Scorer 1 and Scorer 3 scored four different transcripts with 88% reliability. Scorer 1 and Scorer 3 scored four different narratives with 89% reliability. Scorer 1 and 3 met to resolve discrepancies. Adjustments were made to the scoring procedure instructions in the episode section and more examples were added.

Step Six. Scorer 1 and Scorer 2 met and reviewed the latest scoring procedure instructions and reviewed the rubric. Changes were made to the rubrics. For example, in OFTM, changes to consequences and initiating event on episode 1 and 2 were made on the rubric as well as the addition of an alternative initiating event on episode 3. Scorer 1 and Scorer 2 scored 6 different transcripts with 90% reliability, which was deemed acceptable for reliability.

Step Seven. Scorer 1 met with Scorer 2 again to use the latest version of the rubric to score approximately 20 of each *Frog* story utilizing data from a large study that examined the diagnostic markers for identifying SEB children as language impaired (Peňa, Bedore, Gillam, & Bohman, 2006). Scorer 1 and Scorer 2 independently scored one transcript at a time, determined reliability, and made necessary adjustments to the scoring procedure and/or to the rubric. This procedure was followed for each of the *Frog* stories. It was determined that an acceptable reliability score of 80% or above would be

acceptable. The following reliability scores were achieved along with the number of transcripts scored: FWAY, 85%, n=15; FOHO, 90%, n=20; FGTD, 90%, n=20, and OFTM, 85%, n=13. The goal was to score 20 transcripts of each story. However, the number of convenient available transcripts from the Peňa, Bedore, Gillam, and Bohman, 2006 data ranged from 13 to 20. The current version of the rubric is considered reliable to use for the current study. See Appendices E for a *Frog* rubric example.

Appendix E

Example of *Frog* Story Rubric

Example of Frog Story Rubric

Frog Where Are You?

Secondary Episodes		
Episode 7 (boy)	**Episode 8 (Boy)**	**Episode 9 (Boy)**
Outside	outside	water
INITIATING EVENT: ___The **boy climbed (a second climb)** up on the rock and called again for his frog. **OR** **___**The boy **called (said, shouted)** for the frog again. **ACTION:** ___**A1:** He **held** onto some branches so he wouldn't fall. **OBSTACLE:** __But the branches weren't really branches! They were **deer** antlers. **CONSEQUENCE:** ___The **deer picked up the boy** on his head. **Possible** 4 pt **Earned**	**INITIATING EVENT:** ___The **deer (moose, elk)** started **running** **OR** ___with the boy still on his head or **stuck.** **OR** ___They were getting **close to a cliff.** **ACTION:** ___**A1:** The **deer stoppe**d suddenly and **CONSEQUENCE:** ___the **boy and the dog fell** over the edge of the cliff. **OR** **____**The boy and dog **landing in a pond** or had a **big splash** **OR** ____ fall into the water. **Possible** 3 pt **Earned**	**INITIATING EVENT:** ___They **heard a** familiar **sound** **ACTION:** **_____A1:** The boy **told** the dog to be quiet. **OR** **_____A1: Crept up** and looked behind a big log. **AND** ___**A2:** They **found** the pet frog. He had a mother frog with him. They had some baby frogs. **AND** ___ **A3:** A **frog jumped** toward the boy. **CONSEQUENCE:** __The boy **goes home with a frog** **OR** the boy **has (get) a frog**. **OR** ___The boy waved goodbye **OR** ___The boy and dog were happy to have a new pet. **Possible** 5 pt **Earned**

PSGE INDEX (number of secondary episode elements used):

Secondary Episode Elements	Total number of Secondary Episode Elements Possible	Total number of Secondary Episode Elements Earned	Ratio of Secondary Episode elements Re-told
Initiating Event	**9**		
Action	**12**		
Obstacle	**2**		
Consequence	**9**		
Total	**32**		

EPISODIC QUALITY INDEX (ratio of complete or complex episodes)

EPISODE	Episode Target	Points Earned	Points Possible	Complete Episode 3 points	Complex Episode 4 or 5 points *must have IE,A, C + * + 1 = 4 points * 2 = 5 points
E7	IE, A, O, C		**4**		
E8	IE, A, C		**3**		NA
E9	IE, A, A, A, C		**5**		
			Subtotal		
			Total	/ 32 =	

Note: essential elements for a complete episode are in bold as an example of IE, A, and C. (The student can provide any of the actions or obstacle)

Appendix F

Example of *Frog* Story Rubric Scoring Procedure

Example of Frog Story Scoring Procedure

7

IE: Reference to the boy **climbing** a rock (this needs to be a second mention of climbing)
OR
Calling **(said, shouted)** again for the frog.

Accept	**Don't Accept**
• He was in one rock. • He went up the step.	• He was **looking** for a big rock. • Look in a rock.

A1: Reference to the boy **holding** on to branches.

Accept	**Don't Accept**
• He looked in a tree. • He looked in the bush. • He touch the branch.	• The tree. • The stick fall. • There was a big tree. • There was sticks. • To the stick.

O: References to the branches really being a **deer, reindeer, moose, elk (**antlers). (don't count horse, camel, donkey.
OR
Mentioning **deer.**

Accept	**Don't Accept**
• That's no stick. • There was a deer. • And that was not a tree. • They were not branches. • They were moose horns. • It wasn't a bush. • The little thing from Santa Claus.	• It was the thing of the animal. • The little boy went to an animal.

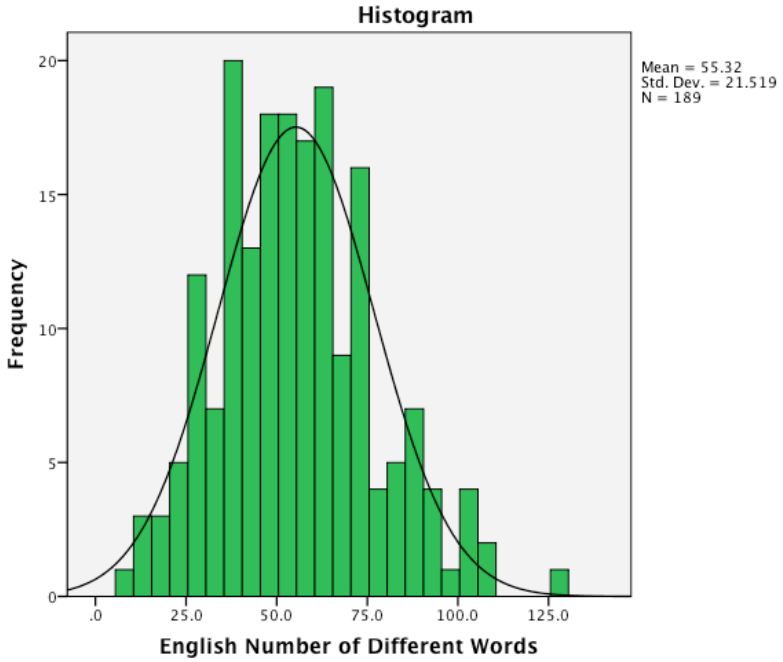
C: A reference to the **deer picking up the boy.**

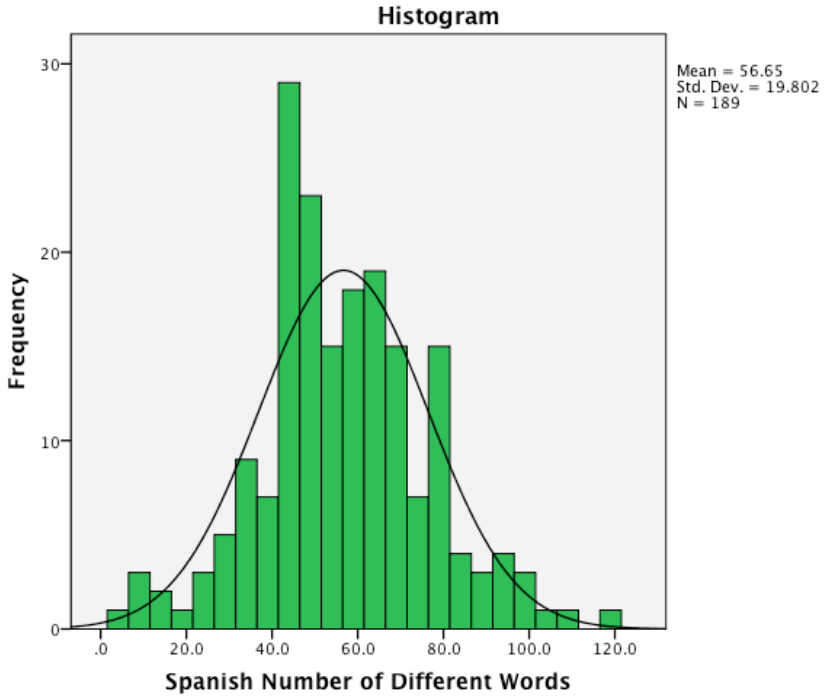
Accept
• The thing got up. • The moose got up. • Deer is going out.

Appendix G

English and Spanish Histograms of English and Spanish NDW

English and Spanish Histograms of English and Spanish NDW





Appendix H

PSGE and EC Indices Graphical Tests for Normality

PSGE and EC Indices Graphical Tests for Normality

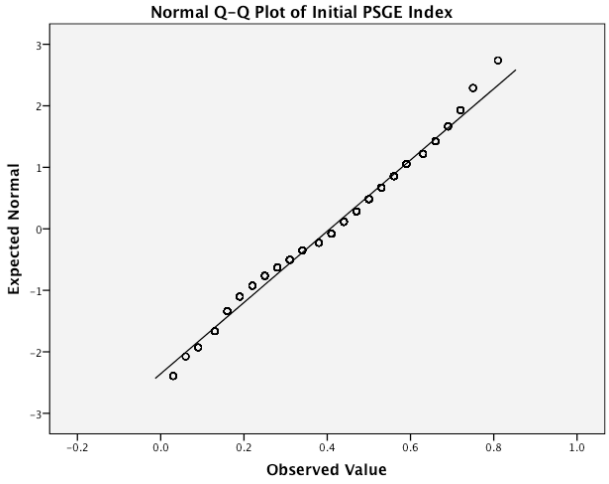


Figure 1. Normal Q-Q plot of predictor variable Initial PSGE Index testing for normality.

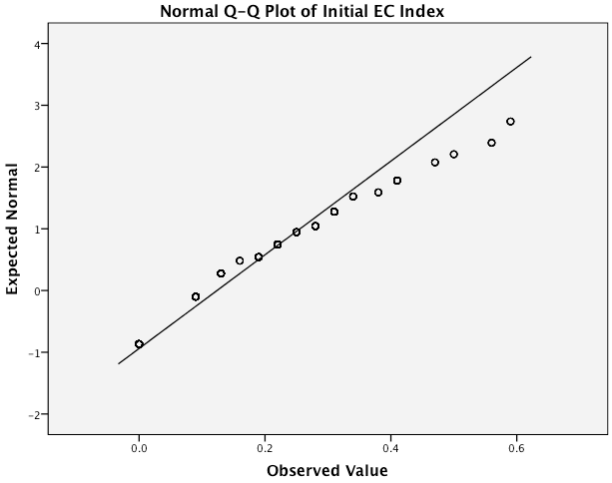


Figure 2. Normal Q-Q plot of predictor variable initial EC Index testing for normality.

Appendix I

PSGE Index Normal Q-Q Plots with Transformations

Normal Q-Q Plots of PSGE Index with Transformations

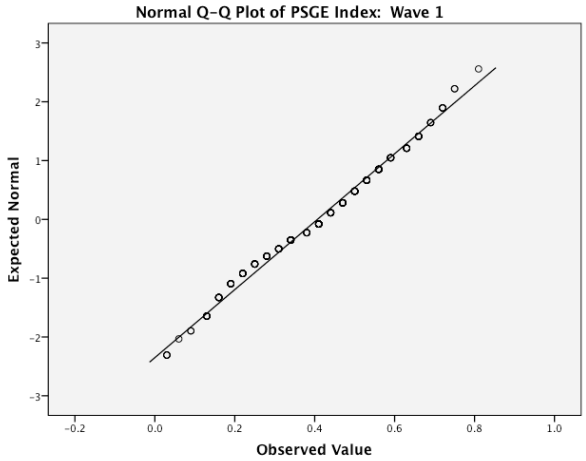


Figure 1. PSGE Index Test of Normality at Wave 1.

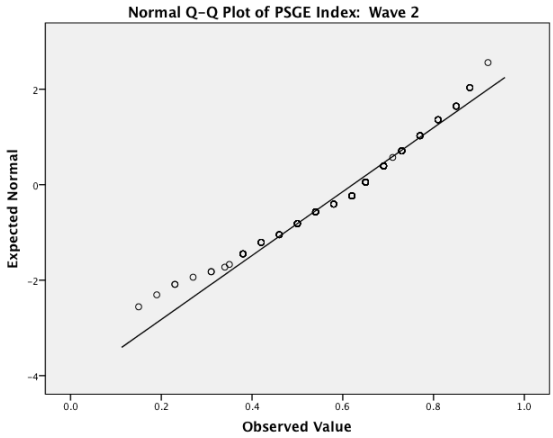


Figure 2. PSGE Index Test of Normality at Wave 2.

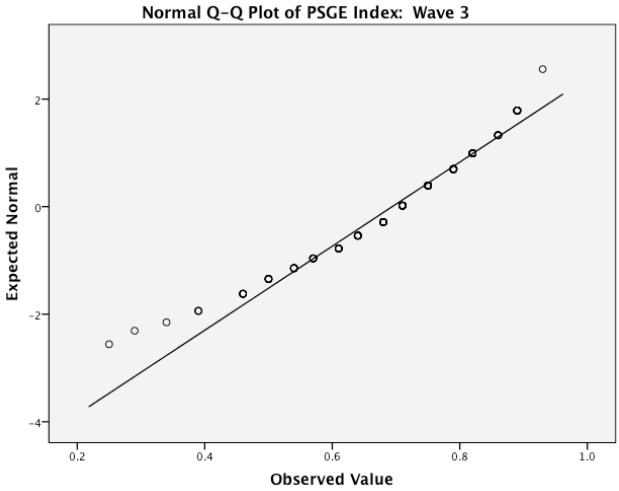


Figure 3. PSGE Index Test of Normality at Wave 3.

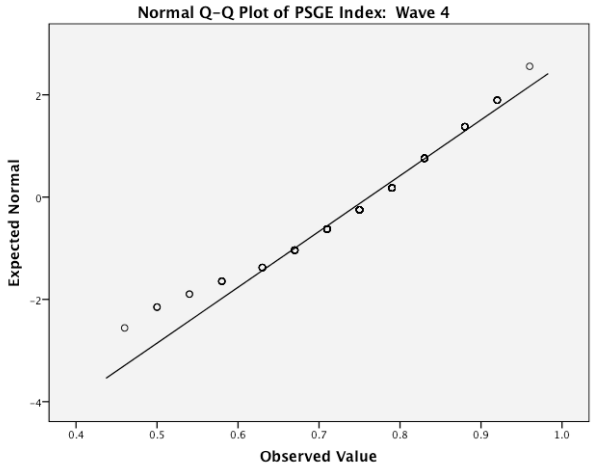


Figure 4. PSGE Index Test of Normality at Wave 4.

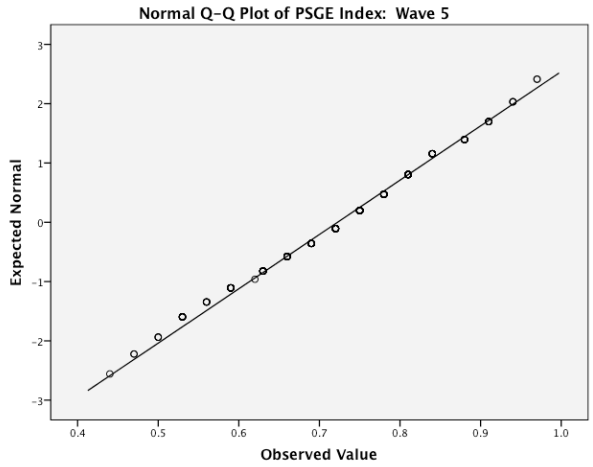


Figure 5. PSGE Index Test of Normality at Wave 5.

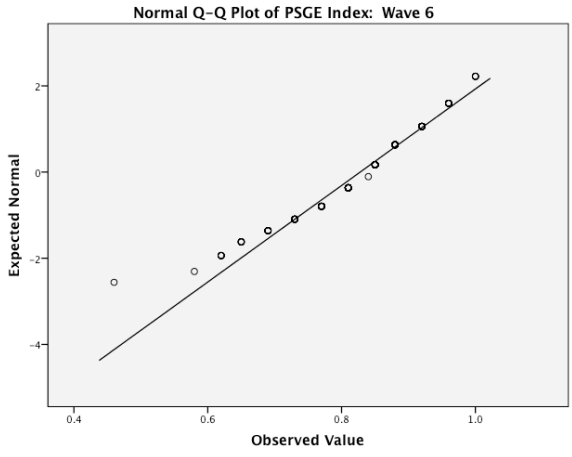


Figure 6. PSGE Index Test of Normality at Wave 6.

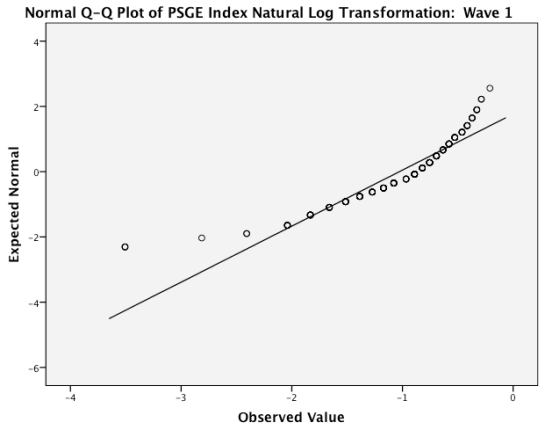


Figure 7. PSGE Index Test of Normality with Natural Log Transformation at Wave 1.

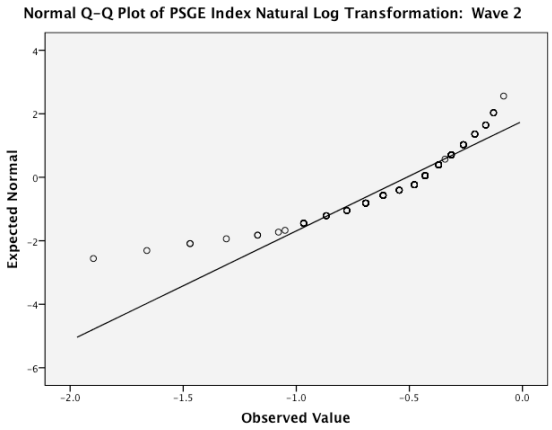


Figure 8. PSGE Index Test of Normality with Natural Log Transformation at Wave 2.

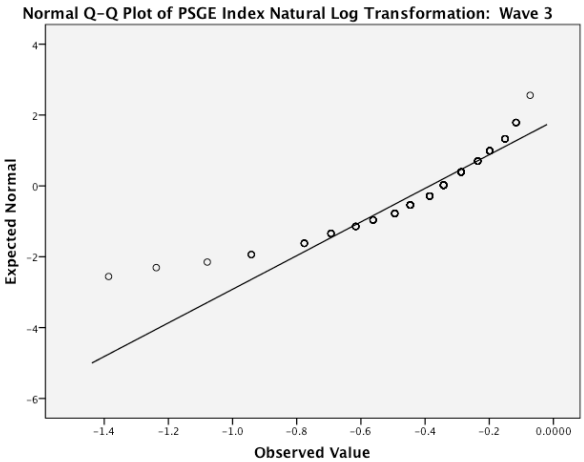


Figure 9. PSGE Index Test of Normality with Natural Log Transformation at Wave 3.

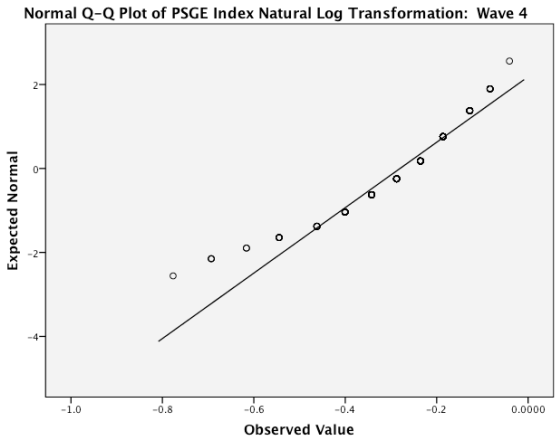


Figure 10. PSGE Index Test of Normality with Natural Log Transformation at Wave 4.

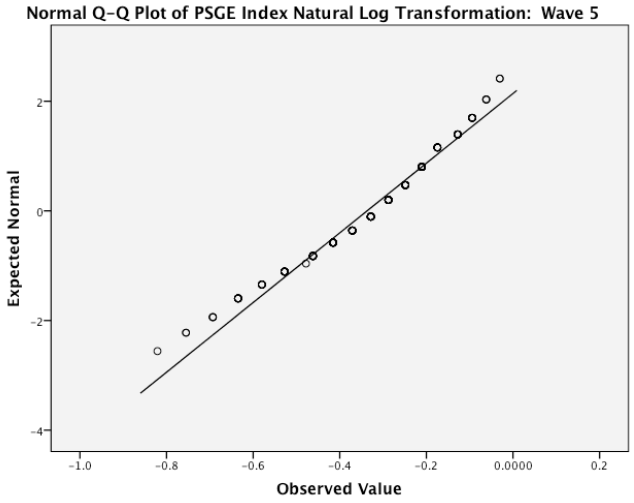


Figure 11. PSGE Index Test of Normality with Natural Log Transformation at Wave 5.

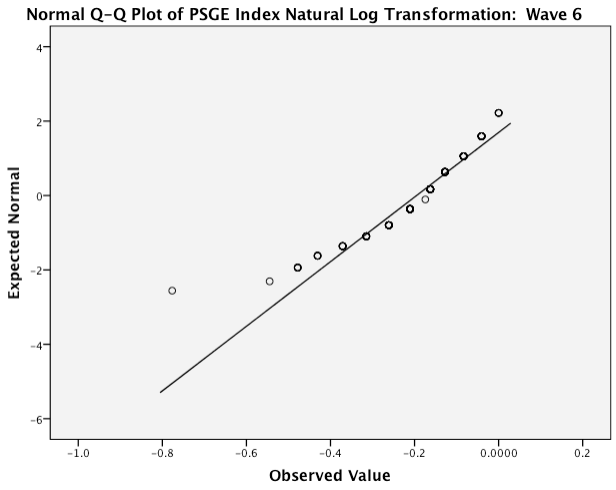


Figure 12. PSGE Index Test of Normality with Natural Log Transformation at Wave 6.

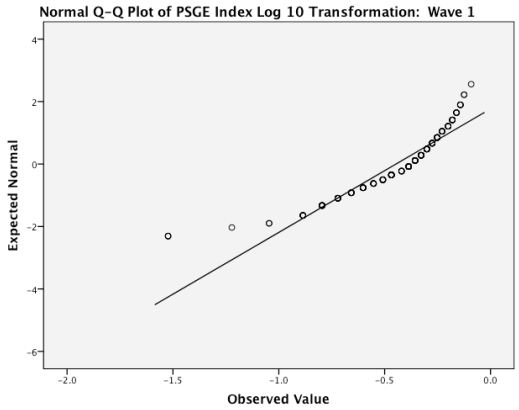


Figure 13. PSGE Index Test of Normality with Log 10 Transformation at Wave 1.

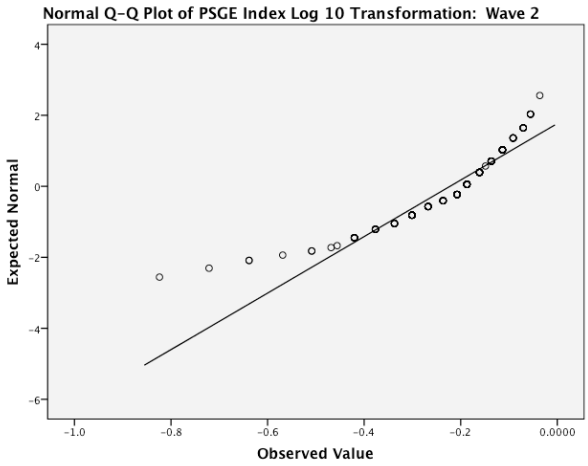


Figure 14. PSGE Index Test of Normality with Log 10 Transformation at Wave 2.

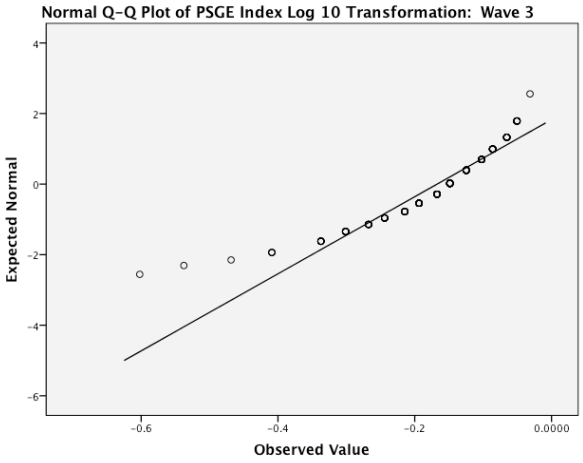


Figure 15. PSGE Index Test of Normality with Log 10 Transformation at Wave 3.

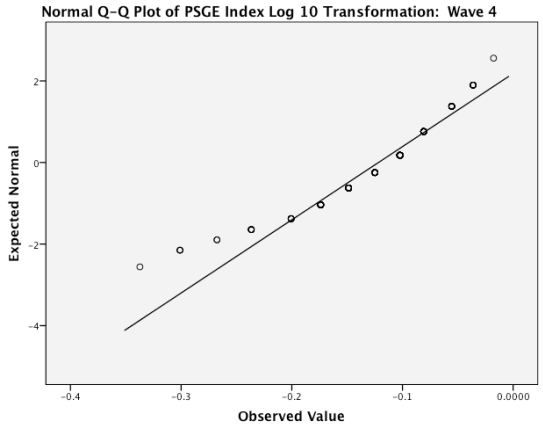


Figure 16. PSGE Index Test of Normality with Log 10 Transformation at Wave 4.

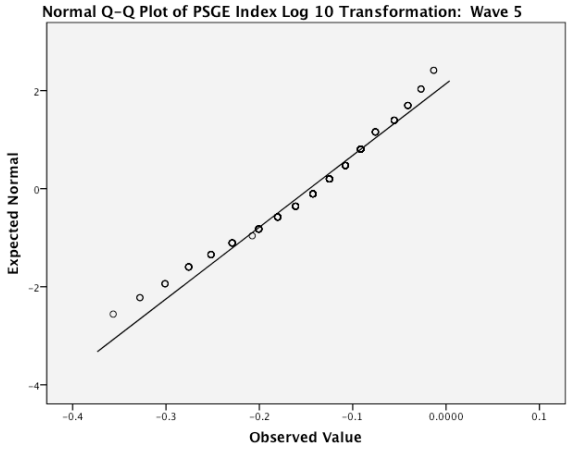


Figure 17. PSGE Index Test of Normality with Log 10 Transformation at Wave 5.

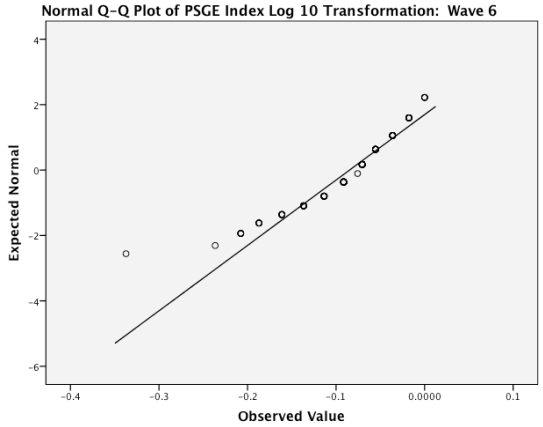


Figure 18. PSGE Index Test of Normality with Log 10 Transformation at Wave 6.

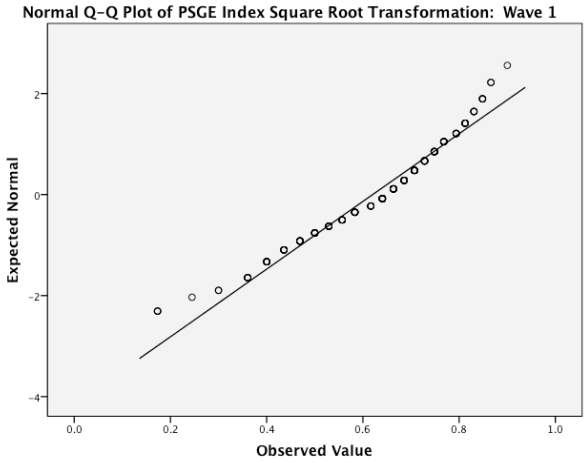


Figure 19. PSGE Index Test of Normality with Square Root Transformation at Wave 1.

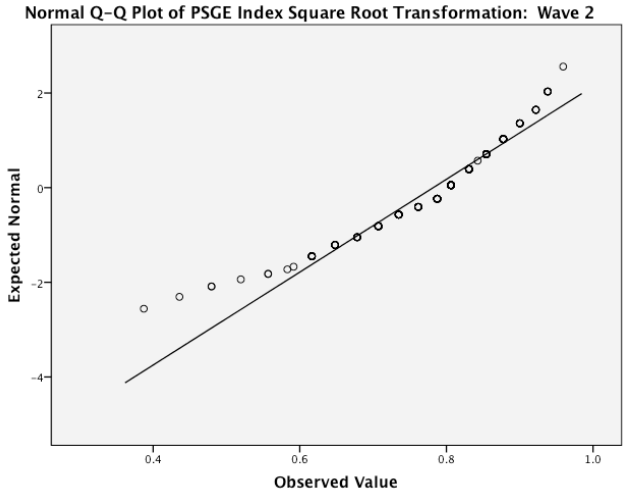


Figure 20. PSGE Index Test of Normality with Square Root Transformation at Wave 2.

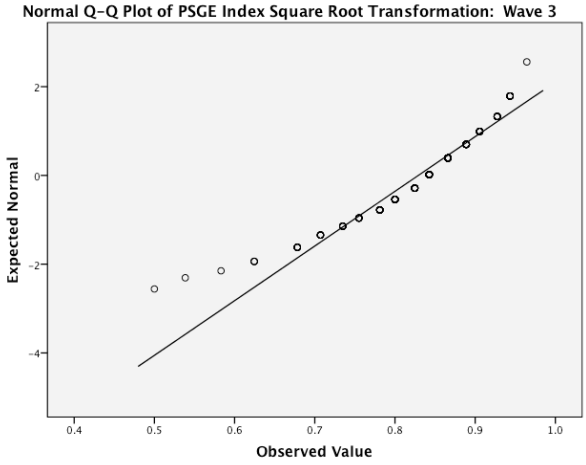


Figure 21. PSGE Index Test of Normality with Square Root Transformation at Wave 3.

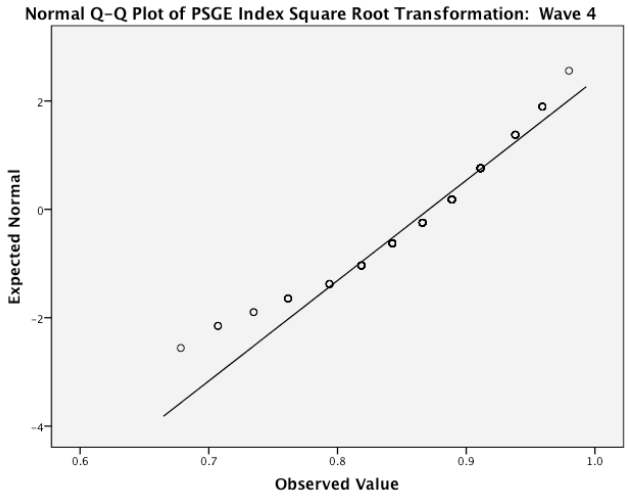


Figure 22. PSGE Index Test of Normality with Square Root Transformation at Wave 4.

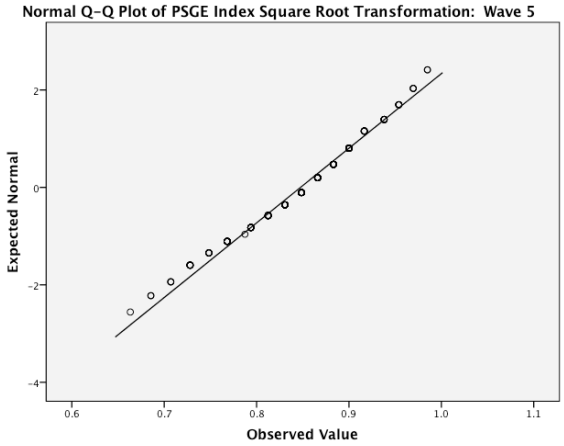


Figure 23. PSGE Index Test of Normality with Square Root Transformation at Wave 5.

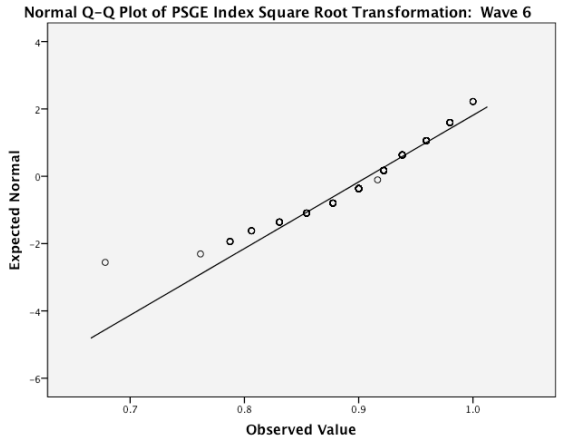


Figure 24. PSGE Index Test of Normality with Square Root Transformation at Wave 6.

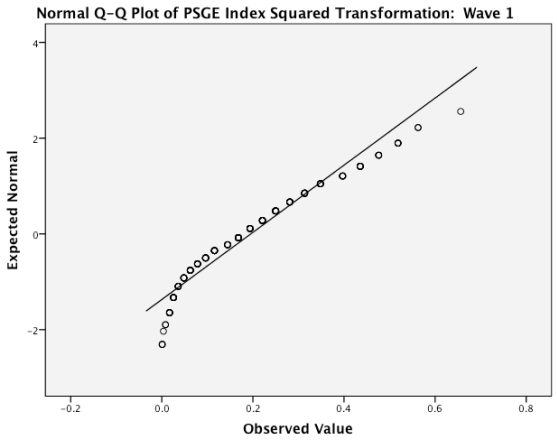


Figure 25. PSGE Index Test of Normality with Squared Transformation at Wave 1.

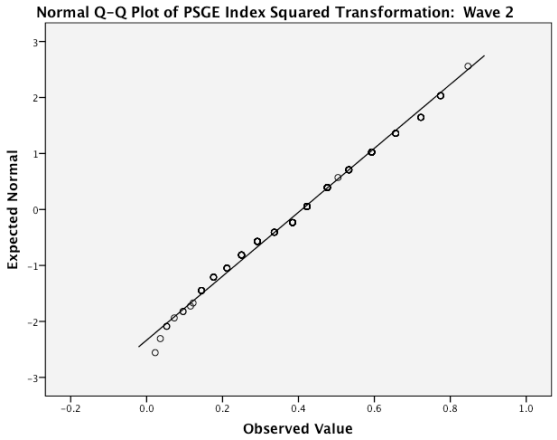


Figure 26. PSGE Index Test of Normality with Squared Transformation at Wave 2.

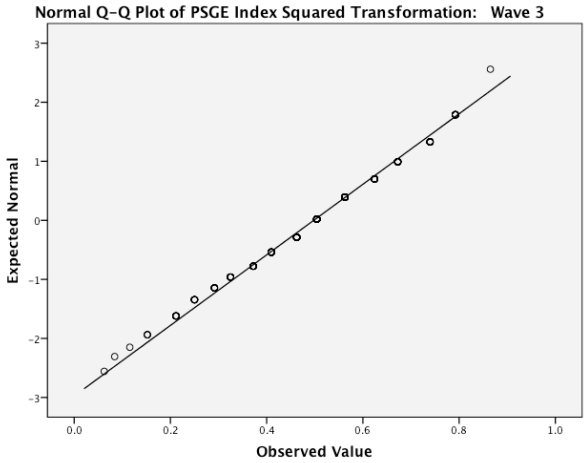


Figure 27. PSGE Index Test of Normality with Squared Transformation at Wave 3.

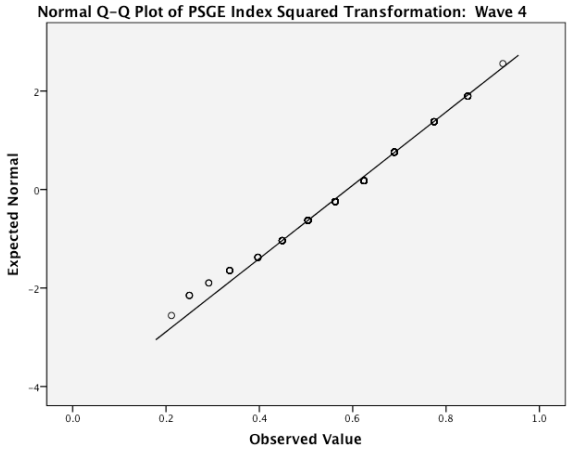


Figure 28. PSGE Index Test of Normality with Squared Transformation at Wave 4.

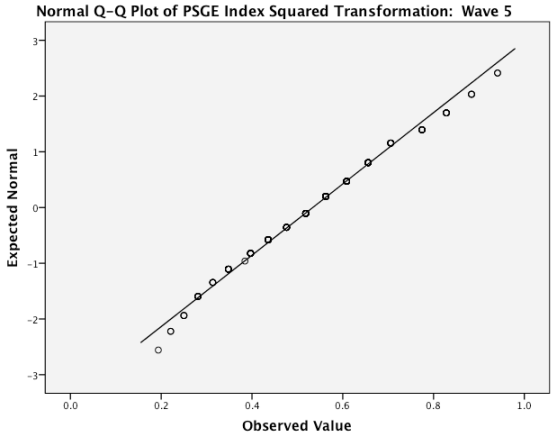


Figure 29. PSGE Index Test of Normality with Squared Transformation at Wave 5.

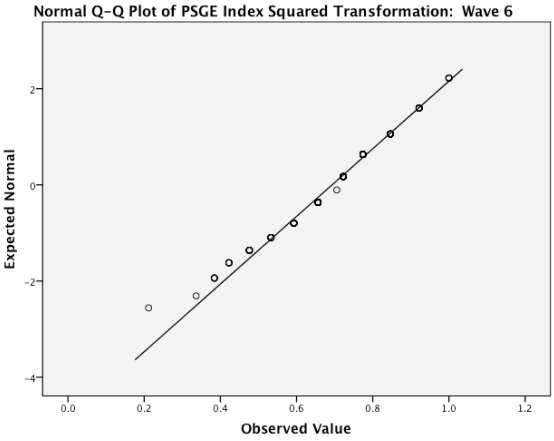


Figure 30. PSGE Index Test of Normality with Squared Transformation at Wave 6.

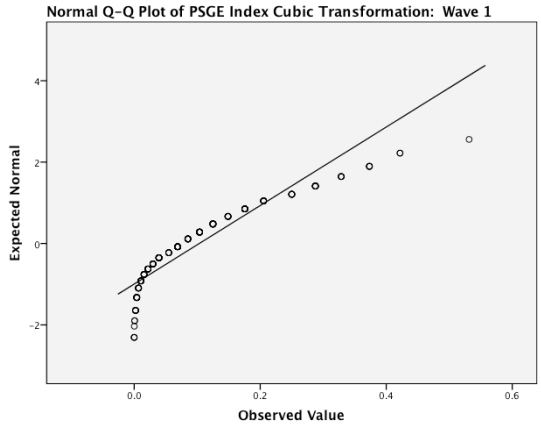


Figure 31. PSGE Index Test of Normality with Cubic Transformation at Wave 1.

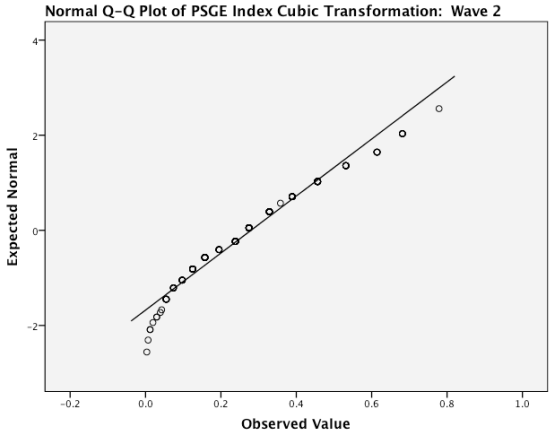


Figure 32. PSGE Index Test of Normality with Cubic Transformation at Wave 2.

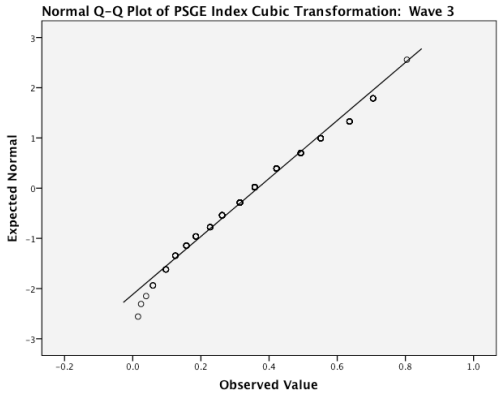


Figure 33. PSGE Index Test of Normality with Cubic Transformation at Wave 3.

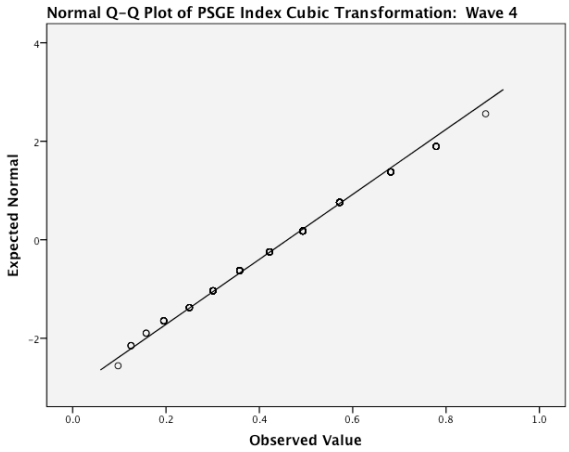


Figure 34. PSGE Index Test of Normality with Cubic Transformation at Wave 4.

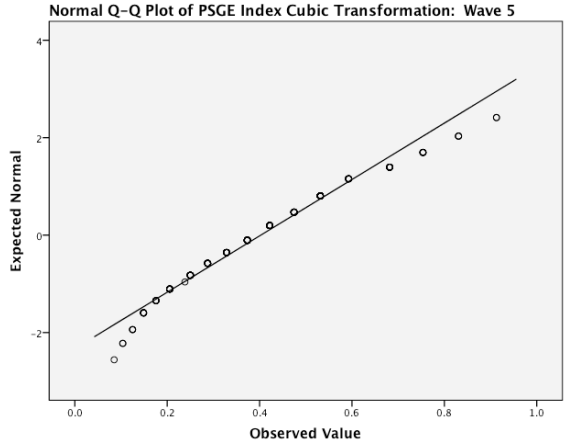


Figure 35. PSGE Index Test of Normality with Cubic Transformation at Wave 5.

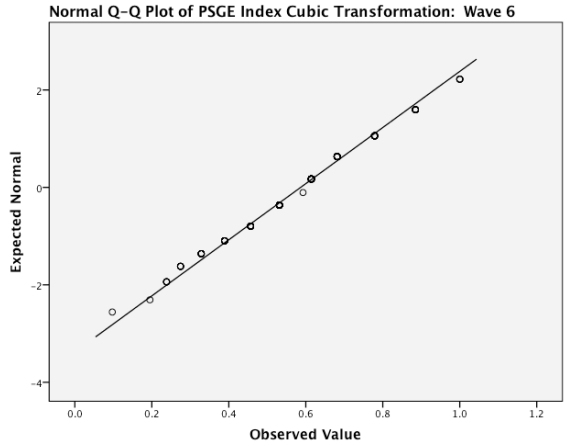


Figure 36. PSGE Index Test of Normality with Cubic Transformation at Wave 6.

Appendix J

Normal Q-Q Plots of EC Index with Transformations

Normal Q-Q Plots of EC Index with Transformations

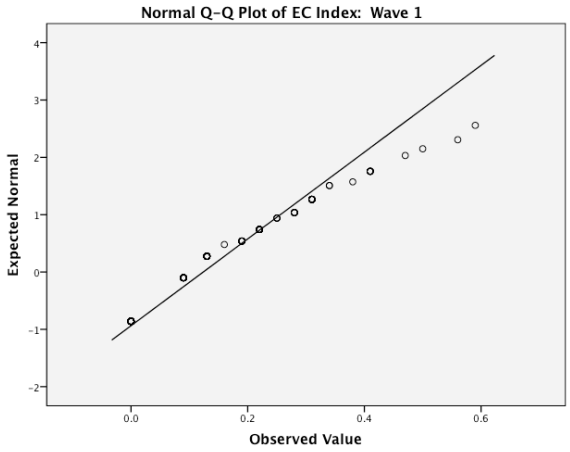


Figure 1. EC Index Test of Normality at Wave 1.

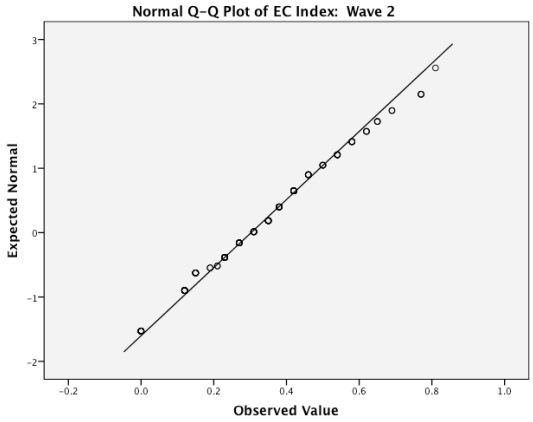


Figure 2. EC Index Test of Normality at Wave 2.

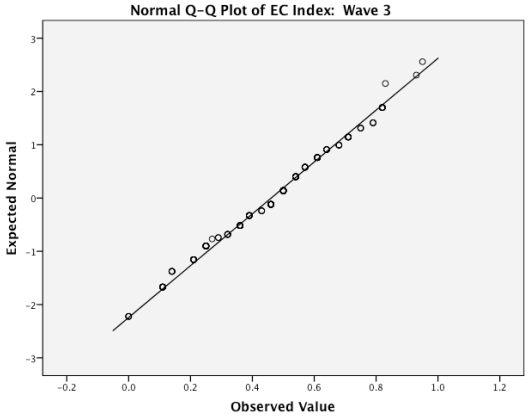


Figure 3. EC Index Test of Normality at Wave 3.

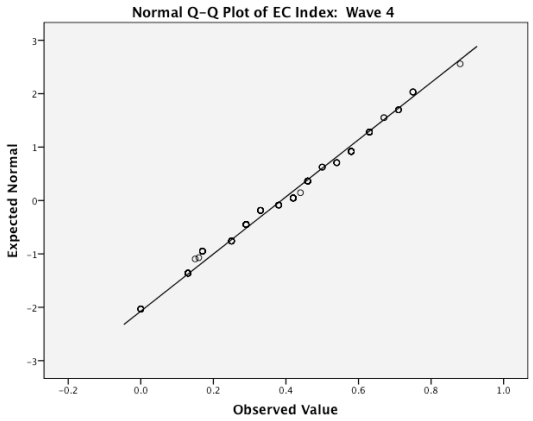


Figure 4. EC Index Test of Normality at Wave 4.

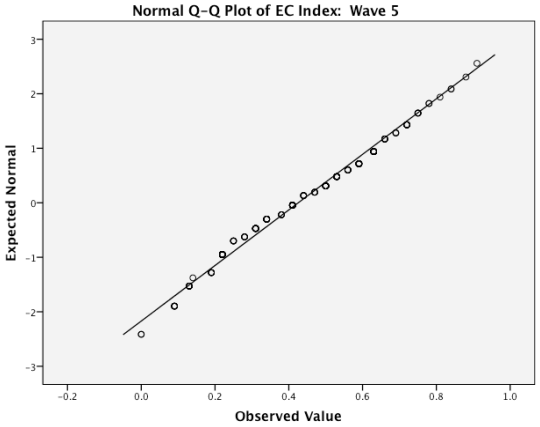


Figure 5. EC Index Test of Normality at Wave 5.

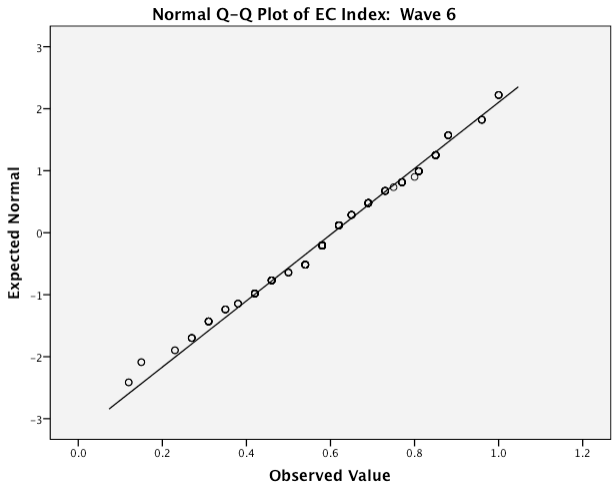


Figure 6. EC Index Test of Normality at Wave 6.

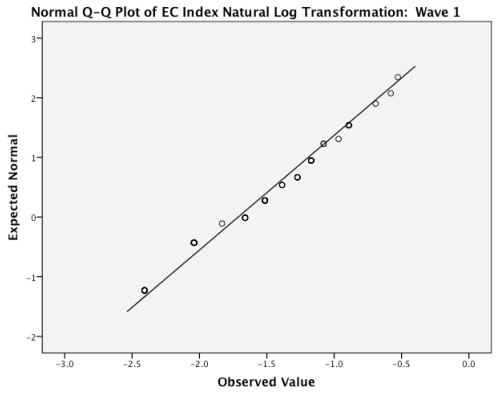


Figure 7. EC Index Test of Normality with Natural Log Transformation at Wave 1.

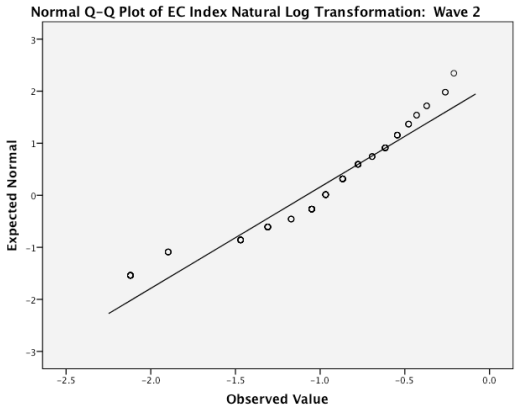


Figure 8. EC Index Test of Normality with Natural Log Transformation at Wave 2.

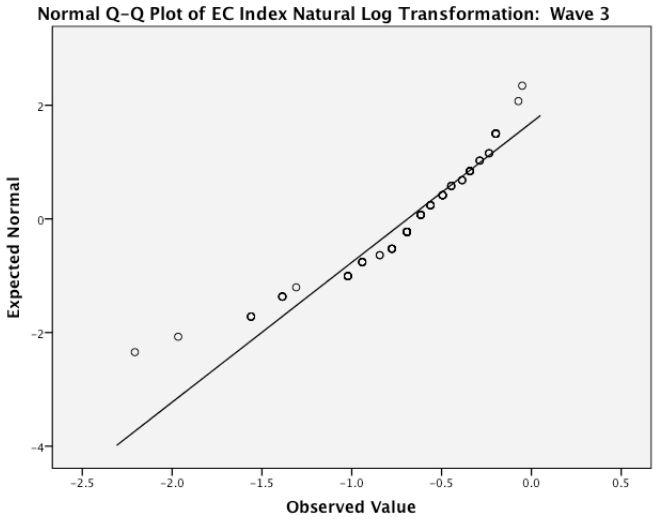


Figure 9. EC Index Test of Normality with Natural Log Transformation at Wave 3.

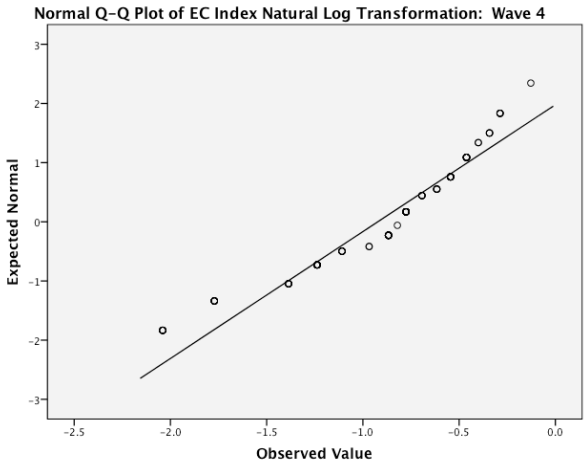


Figure 10. EC Index Test of Normality with Natural Log Transformation at Wave 4.

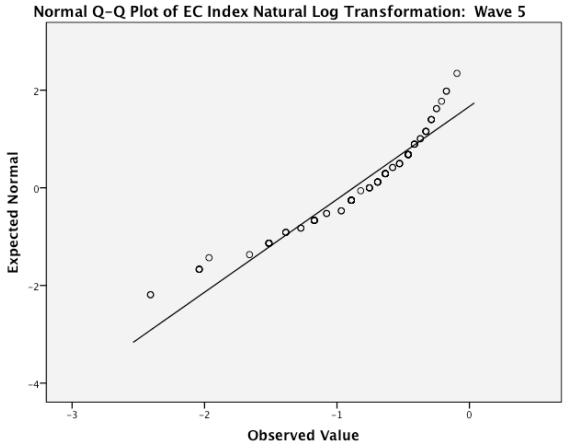


Figure 11. EC Index Test of Normality with Natural Log Transformation at Wave 5.

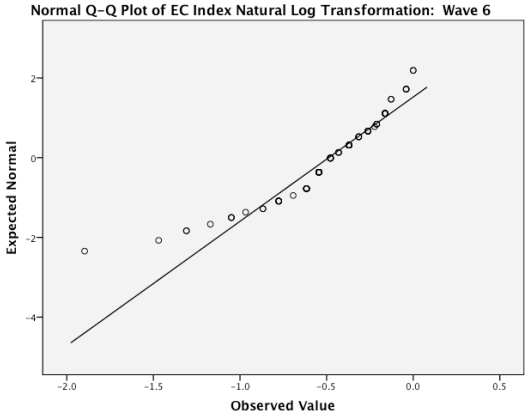


Figure 12. EC Index Test of Normality with Natural Log Transformation at Wave 6.

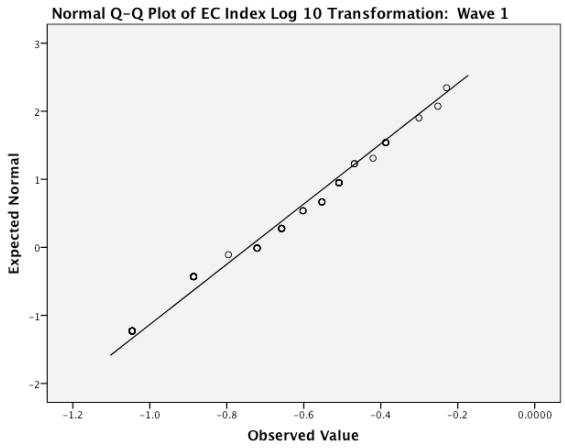


Figure 13. EC Index Test of Normality with Log 10 Transformation at Wave 1.

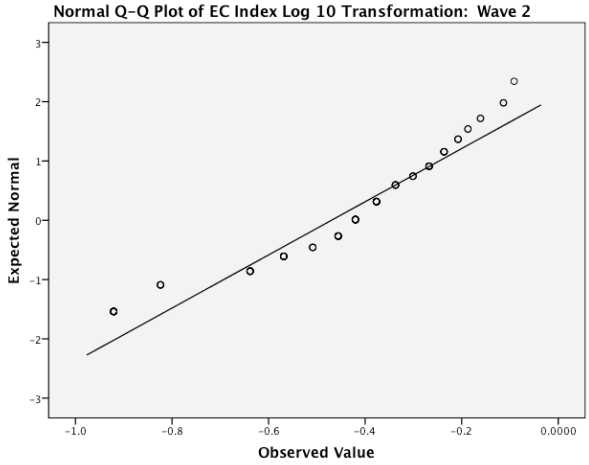


Figure 14. EC Index Test of Normality with Log 10 Transformation at Wave 2.

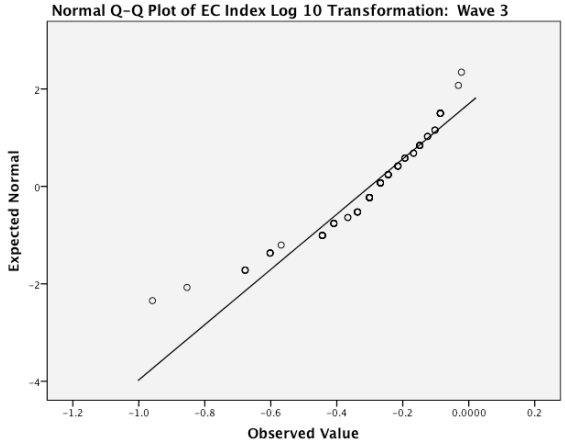


Figure 15. EC Index Test of Normality with Log 10 Transformation at Wave 3.

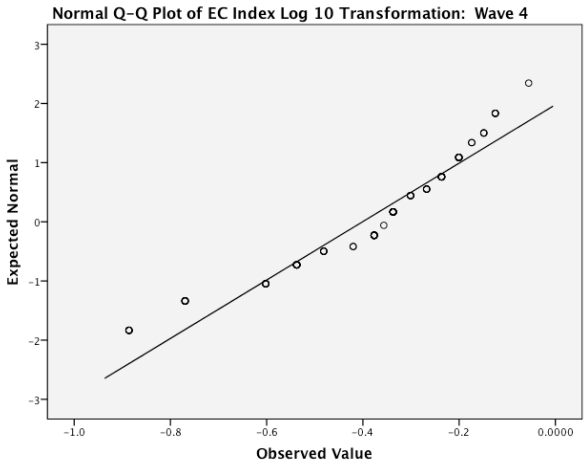


Figure 16. EC Index Test of Normality with Log 10 Transformation at Wave 4.

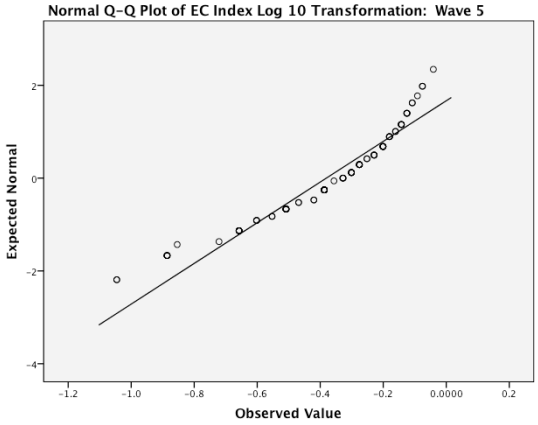


Figure 17. EC Index Test of Normality with Log 10 Transformation at Wave 5.

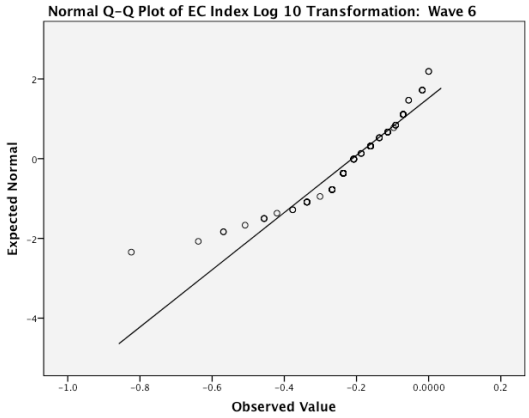


Figure 18. EC Index Test of Normality with Log 10 Transformation at Wave 6.

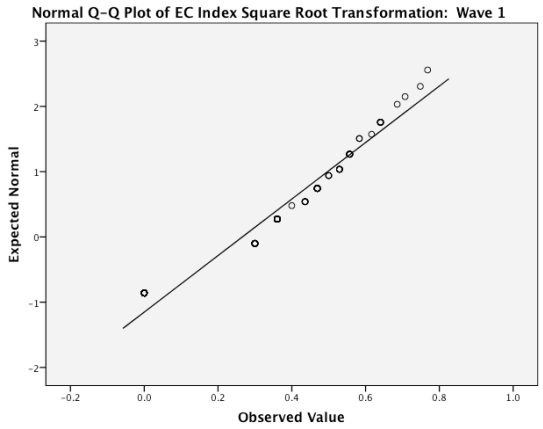


Figure 19. EC Index Test of Normality with Square Root Transformation at Wave 1.

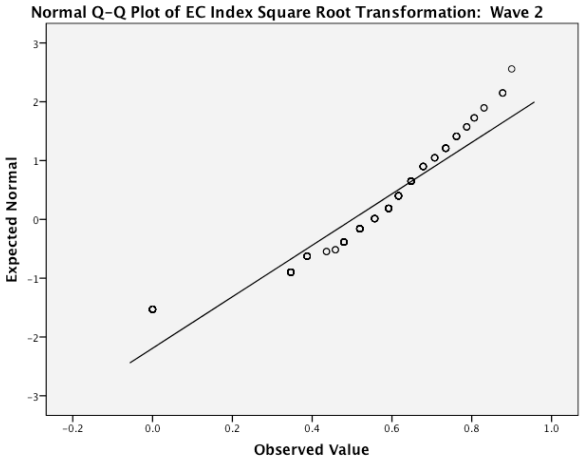


Figure 20. EC Index Test of Normality with Square Root Transformation at Wave 2.

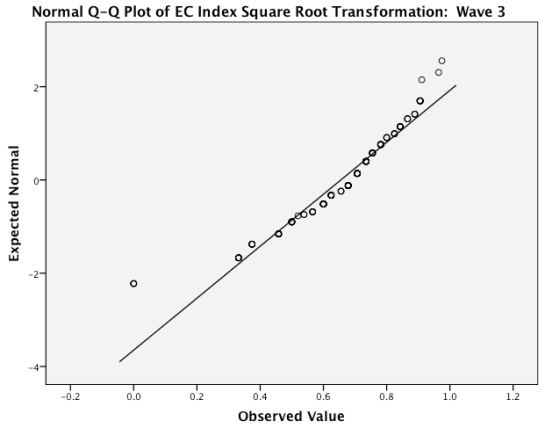


Figure 21. EC Index Test of Normality with Square Root Transformation at Wave 3.

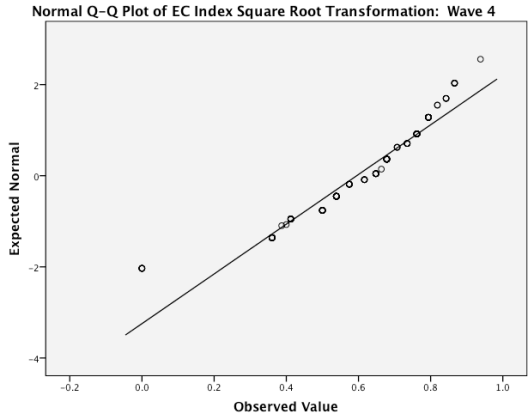


Figure 22. EC Index Test of Normality with Square Root Transformation at Wave 4.

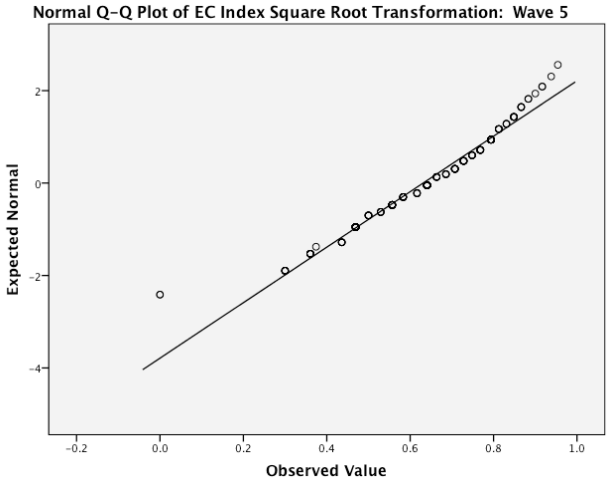


Figure 23. EC Index Test of Normality with Square Root Transformation at Wave 5.

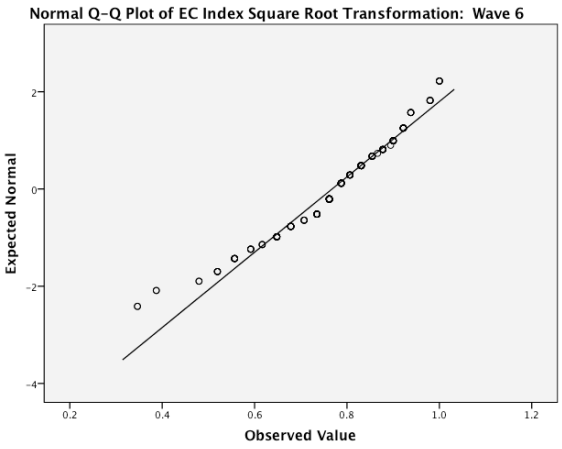


Figure 24. EC Index Test of Normality with Square Root Transformation at Wave 6.

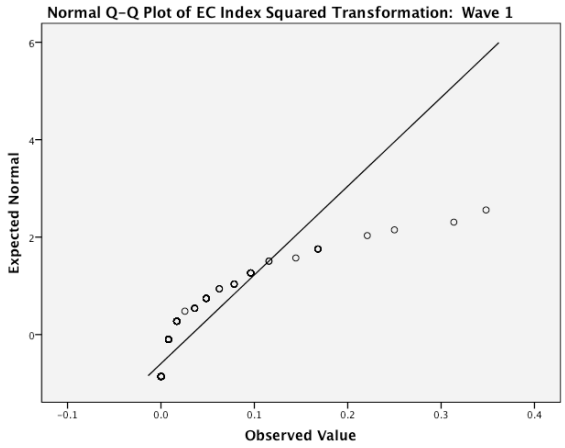


Figure 25. EC Index Test of Normality with Squared Transformation at Wave 1.

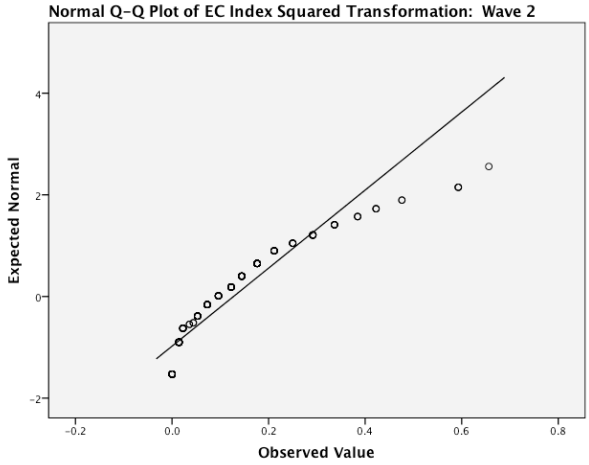


Figure 26. EC Index Test of Normality with Squared Transformation at Wave 2.

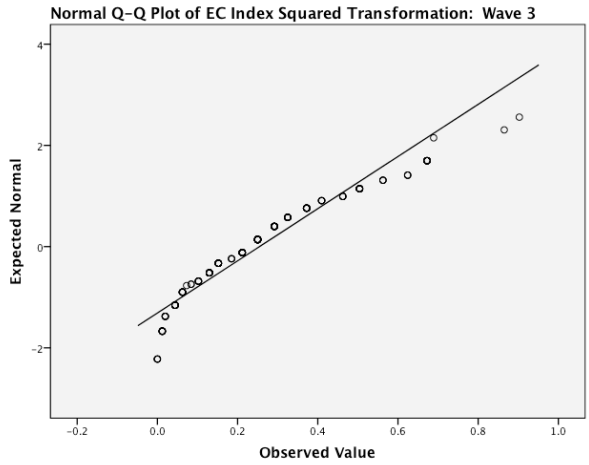


Figure 27. EC Index Test of Normality with Squared Transformation at Wave 3.

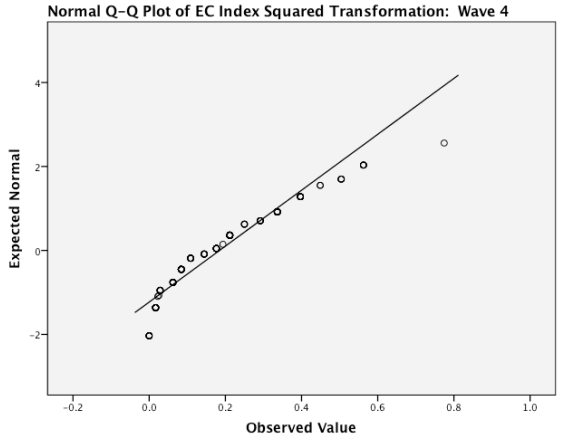


Figure 28. EC Index Test of Normality with Squared Transformation at Wave 4.

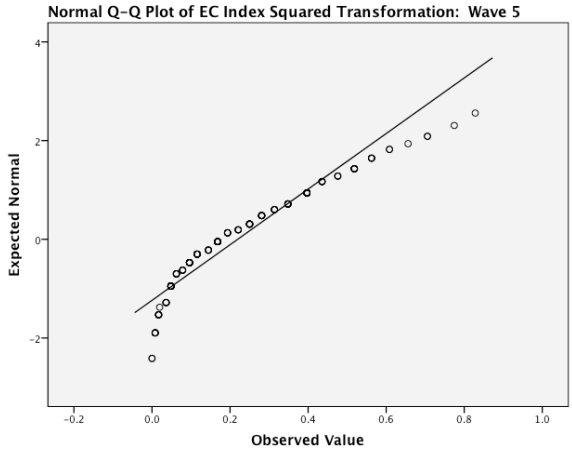


Figure 29. EC Index Test of Normality with Squared Transformation at Wave 5.

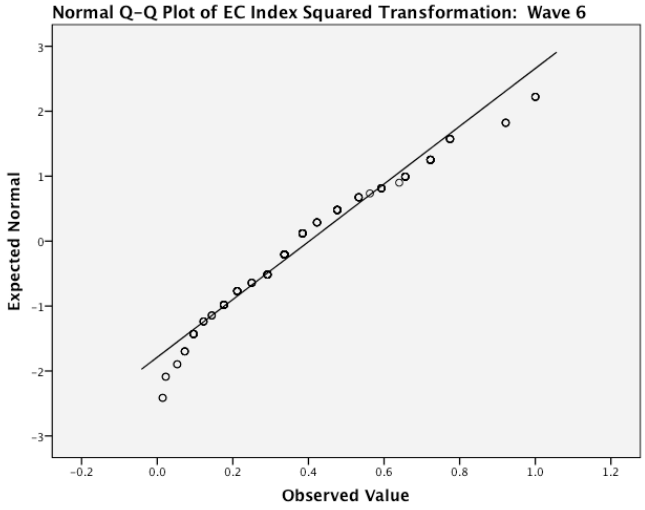


Figure 30. EC Index Test of Normality with Squared Transformation at Wave 6.

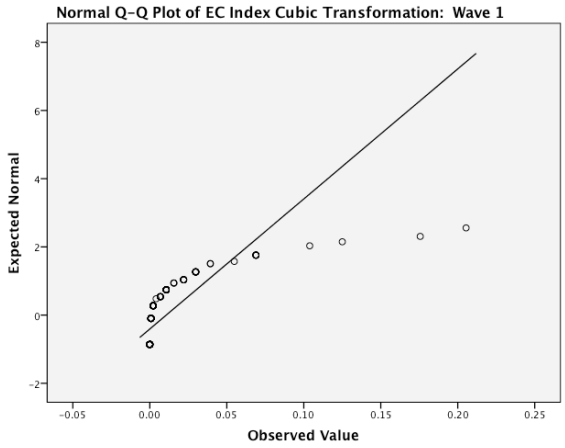


Figure 31. EC Index Test of Normality with Cubic Transformation at Wave 1.

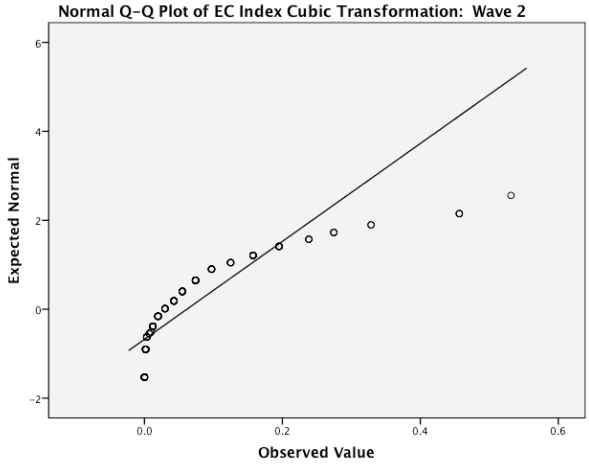


Figure 32. EC Index Test of Normality with Cubic Transformation at Wave 2.

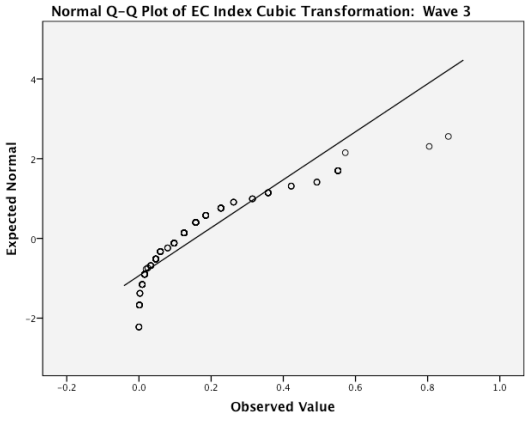


Figure 33. EC Index Test of Normality with Cubic Transformation at Wave 3.

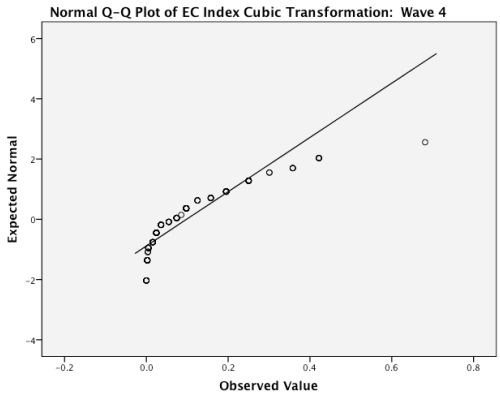


Figure 34. EC Index Test of Normality with Cubic Transformation at Wave 4.

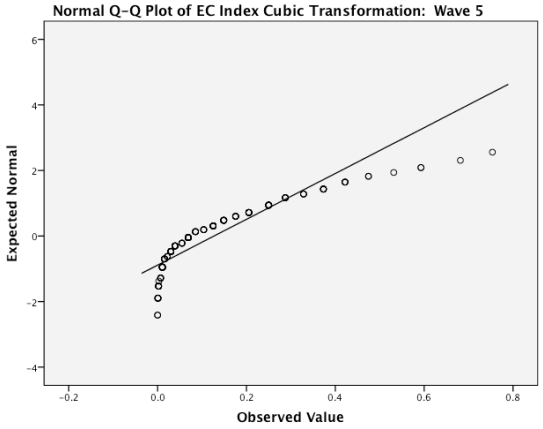


Figure 35. EC Index Test of Normality with Cubic Transformation at Wave 5.

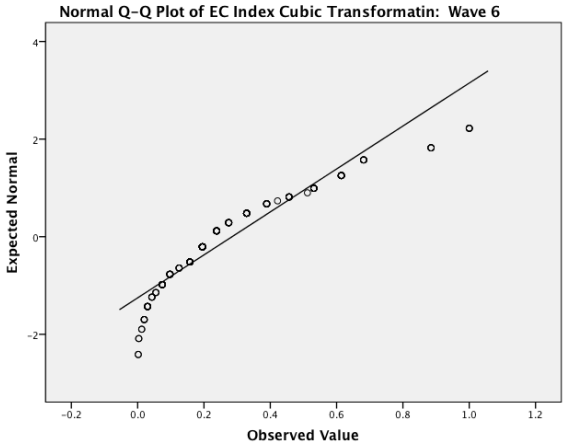
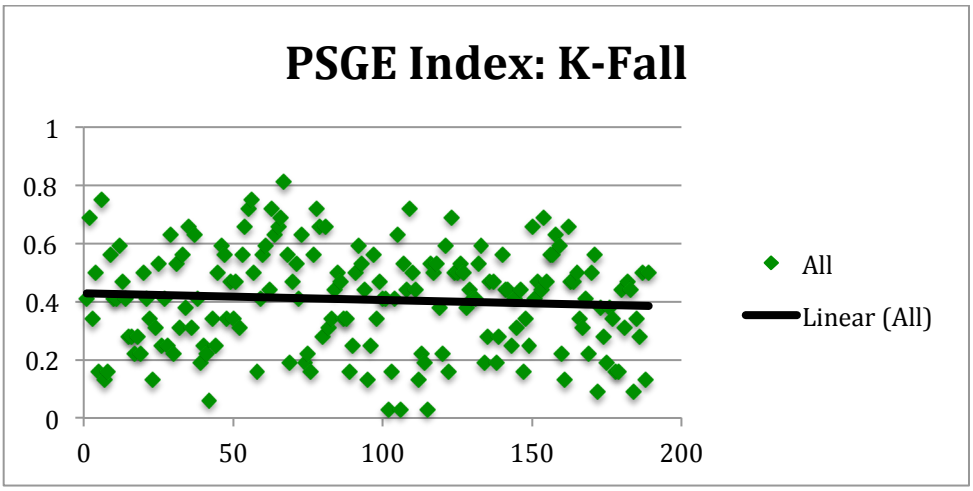


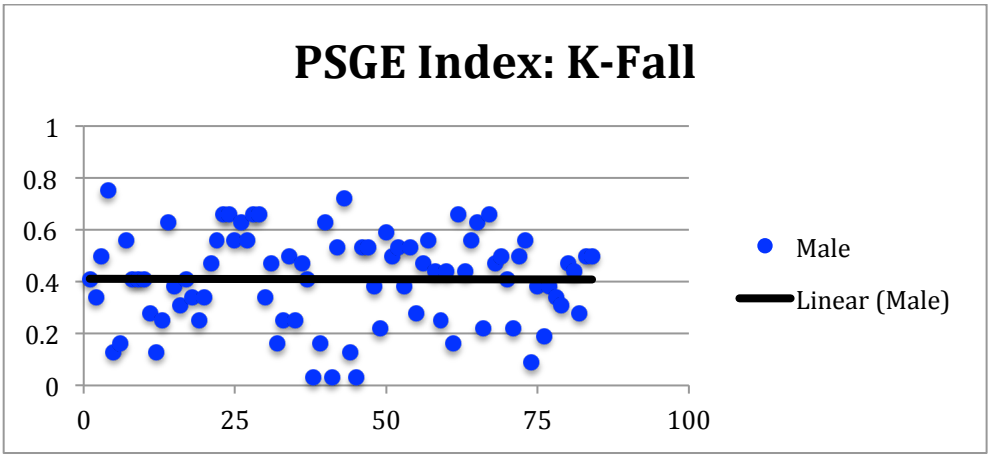
Figure 36. EC Index Test of Normality with Cubic Transformation at Wave 1.

Appendix K

Scatterplots and Boxplots of PSGE Index Performance at Each Wave

Scatterplots and Boxplots of PSGE Index Performance at each Wave





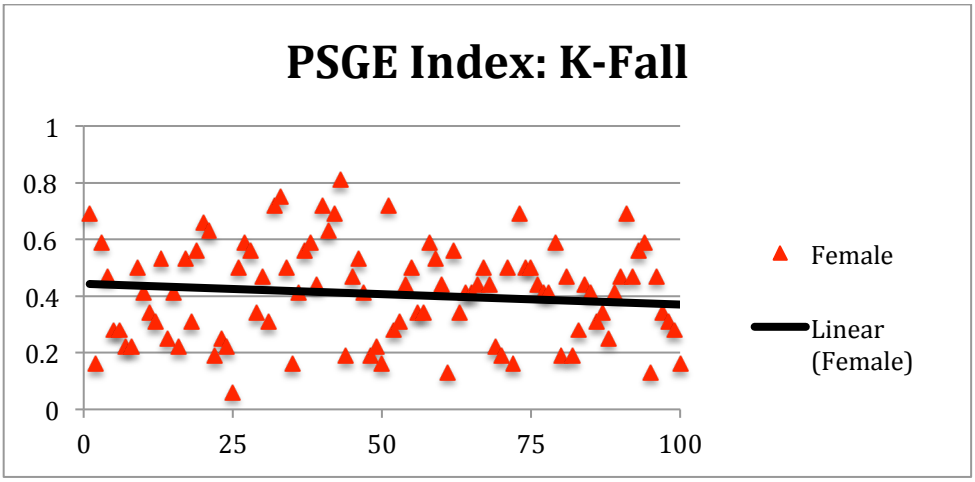


Figure 1. Scatterplots of Portion of Story Grammar Element (PSGE) Index at fall of Kindergarten for all participants, males, and females with trend lines.

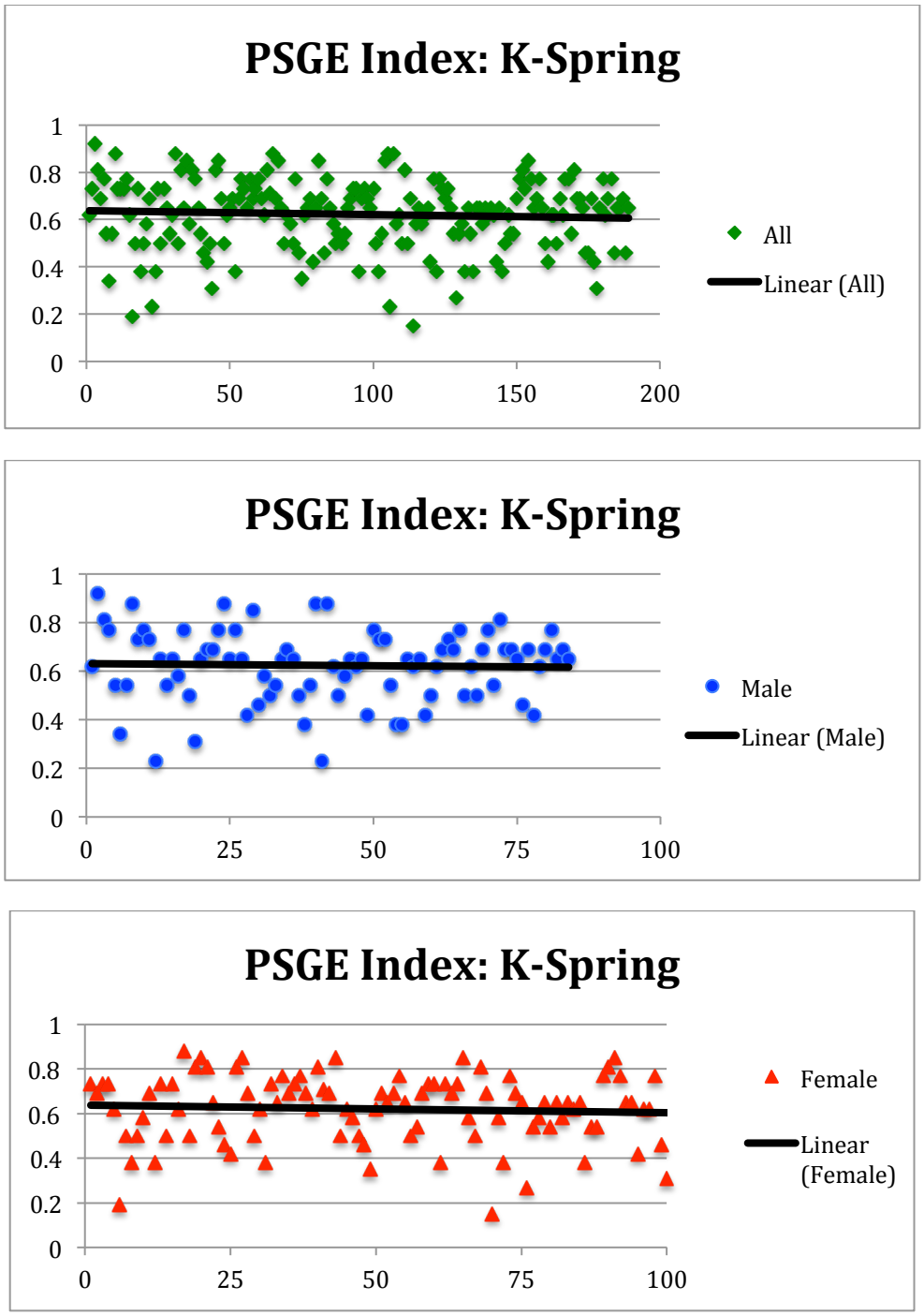
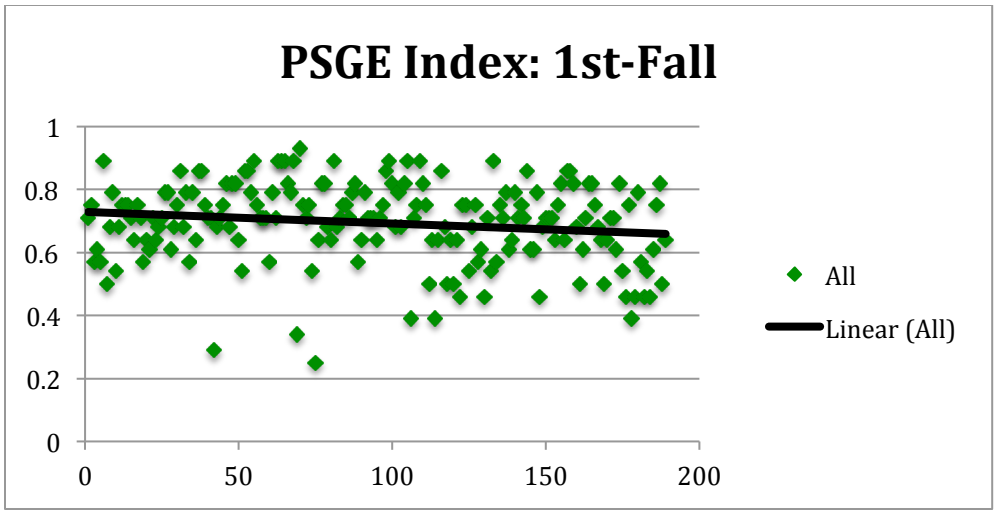
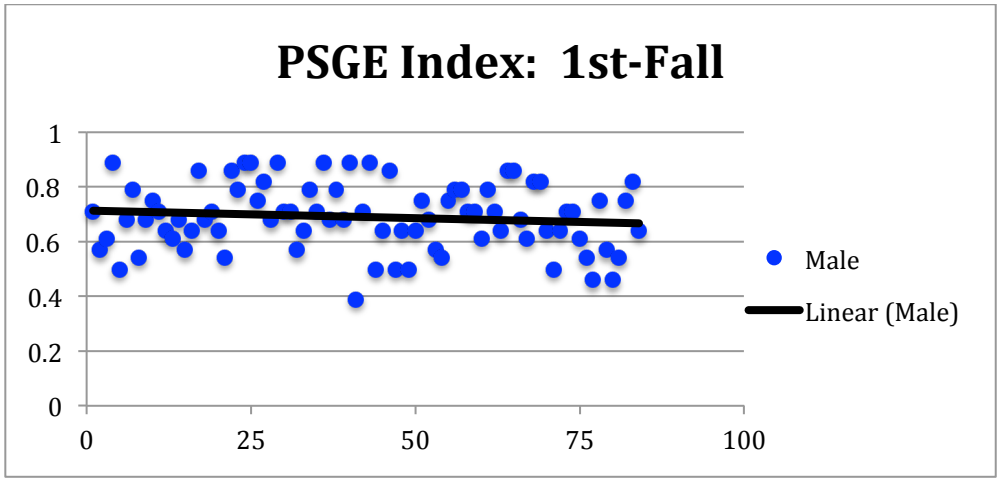


Figure 2. Scatterplots of Portion of Story Grammar Element (PSGE) Index at spring of Kindergarten for all participants, males, and females with trend lines.





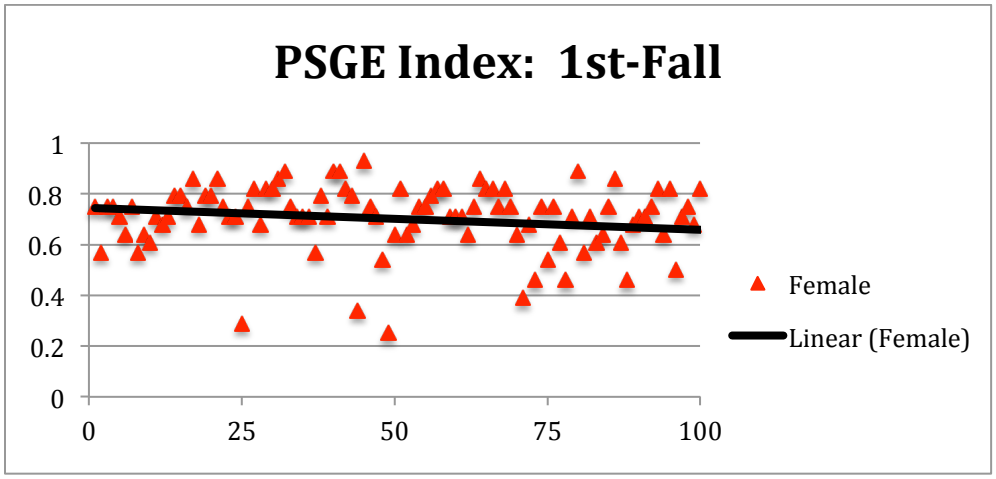
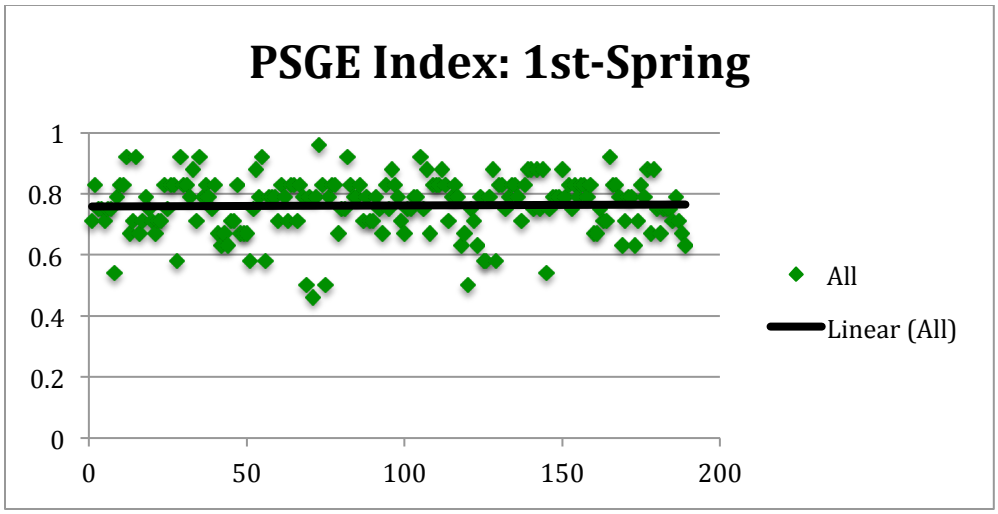
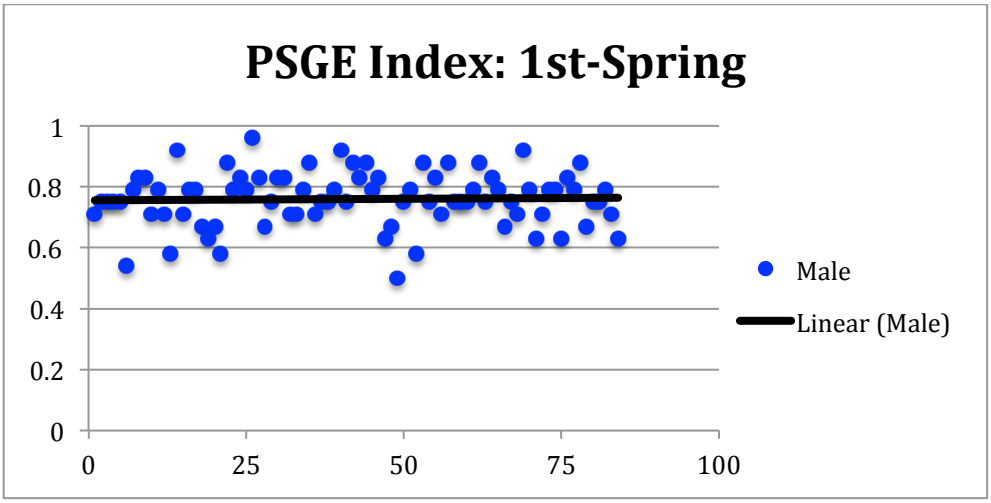


Figure 3. Scatterplots of Portion of Story Grammar Element (PSGE) Index at fall of 1st grade for all participants, males, and females with trend lines.





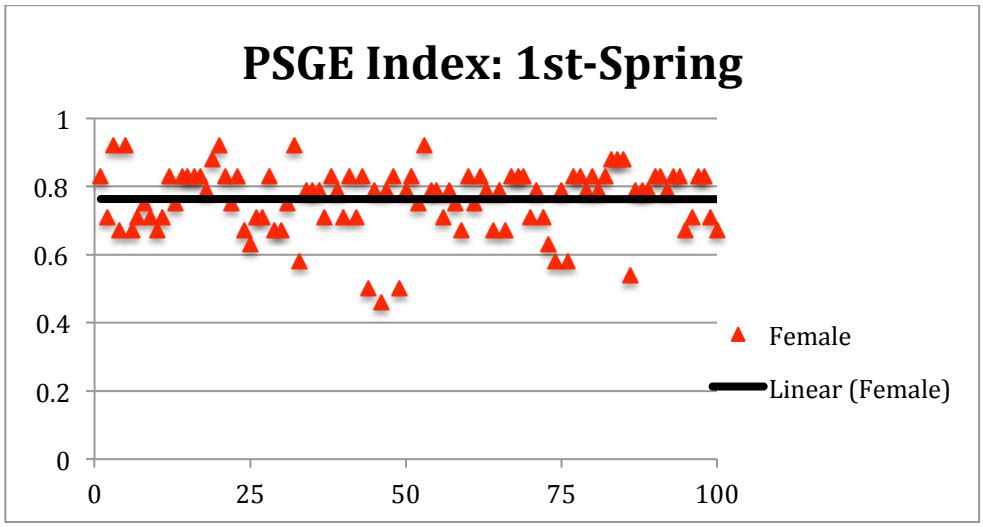


Figure 4. Scatterplots of Portion of Story Grammar Element (PSGE) Index at spring of 1st grade for all participants, males, and females with trend lines.

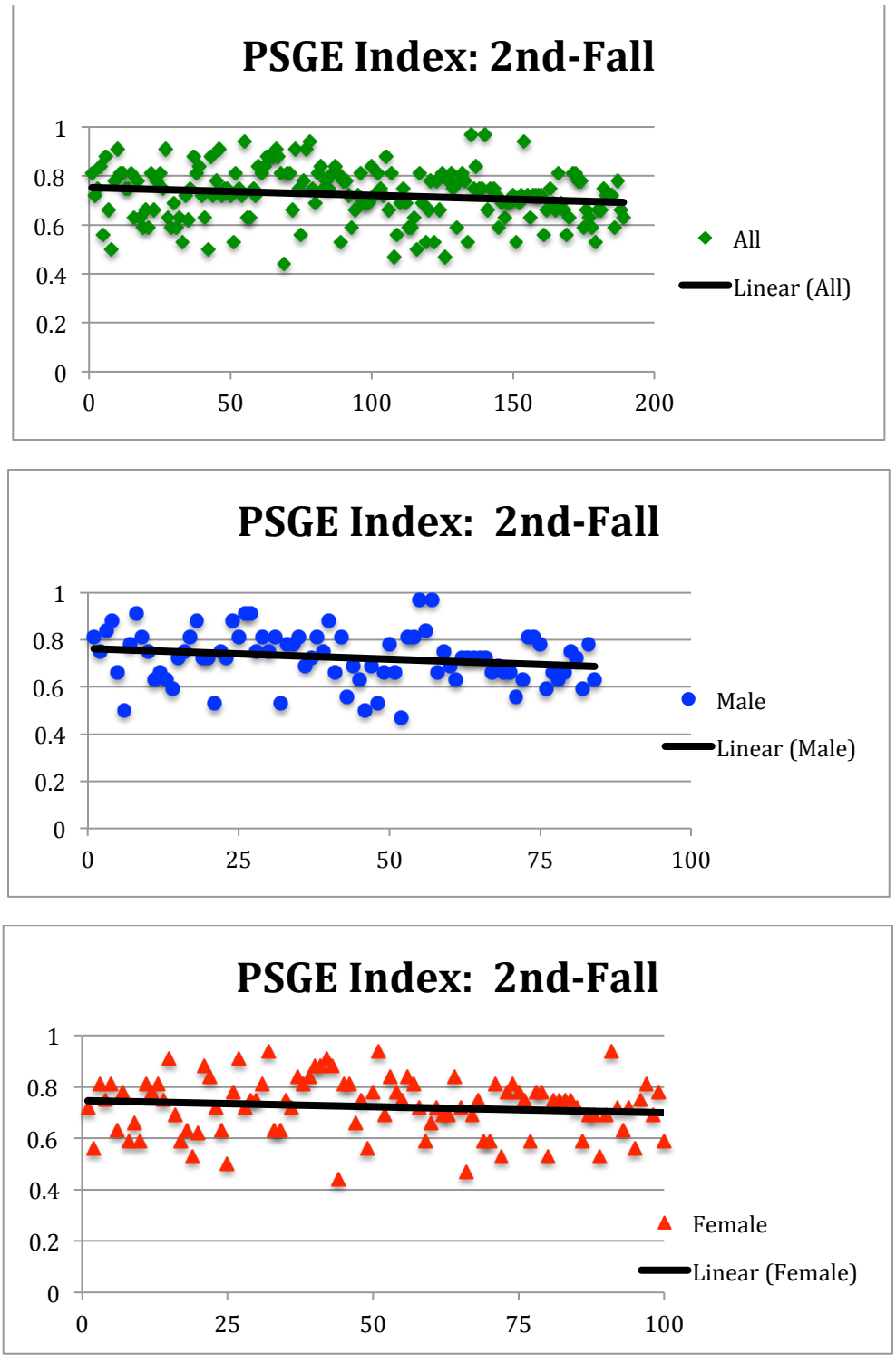
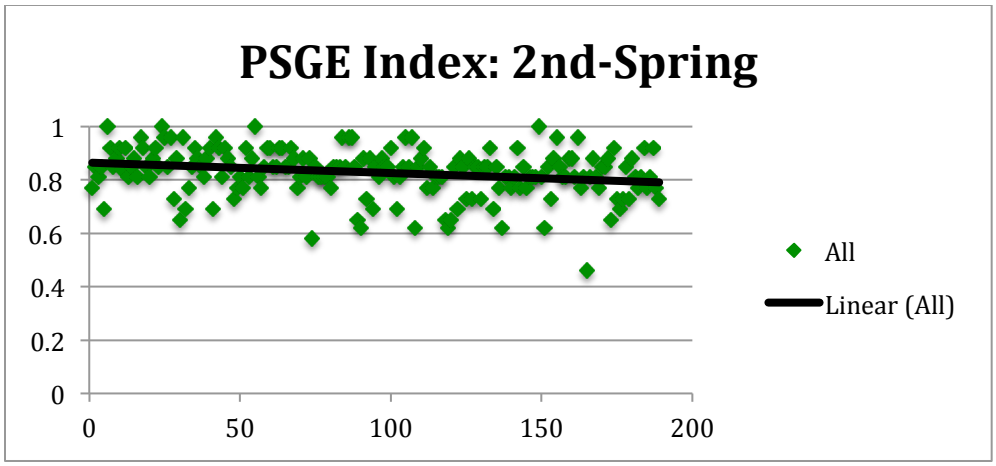
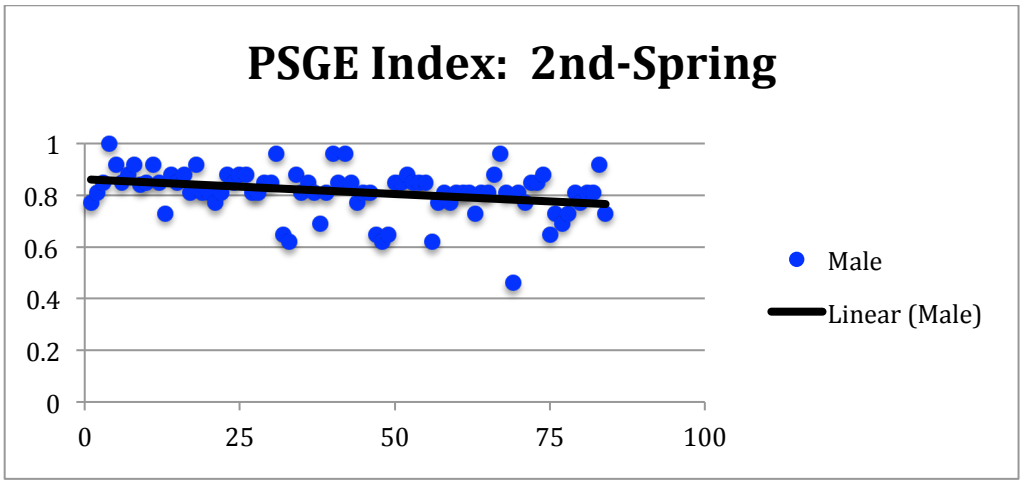


Figure 5. Scatterplots of Portion of Story Grammar Element (PSGE) Index at fall of 2nd grade for all participants, males, and females with trend lines.





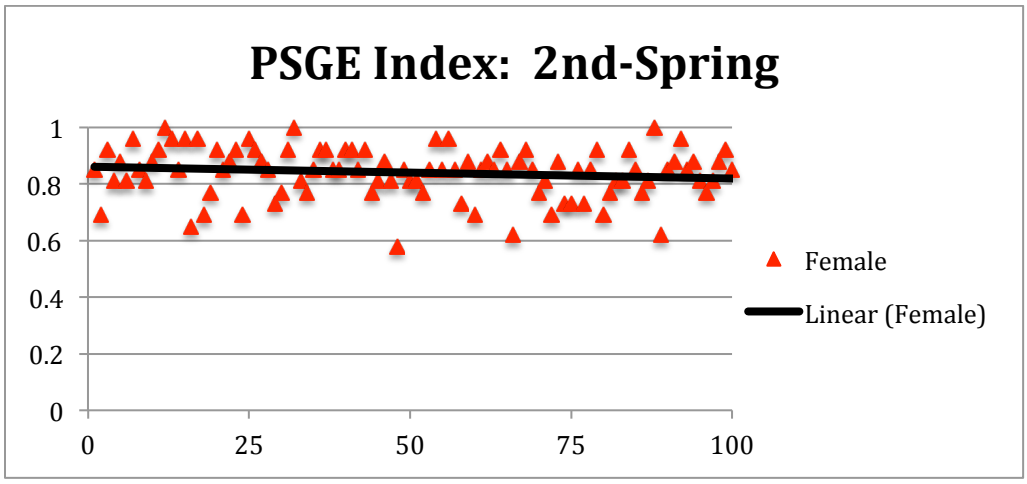


Figure 6. Scatterplots of Portion of Story Grammar Element (PSGE) Index at spring of 2nd grade for all participants, males, and females with trend lines.

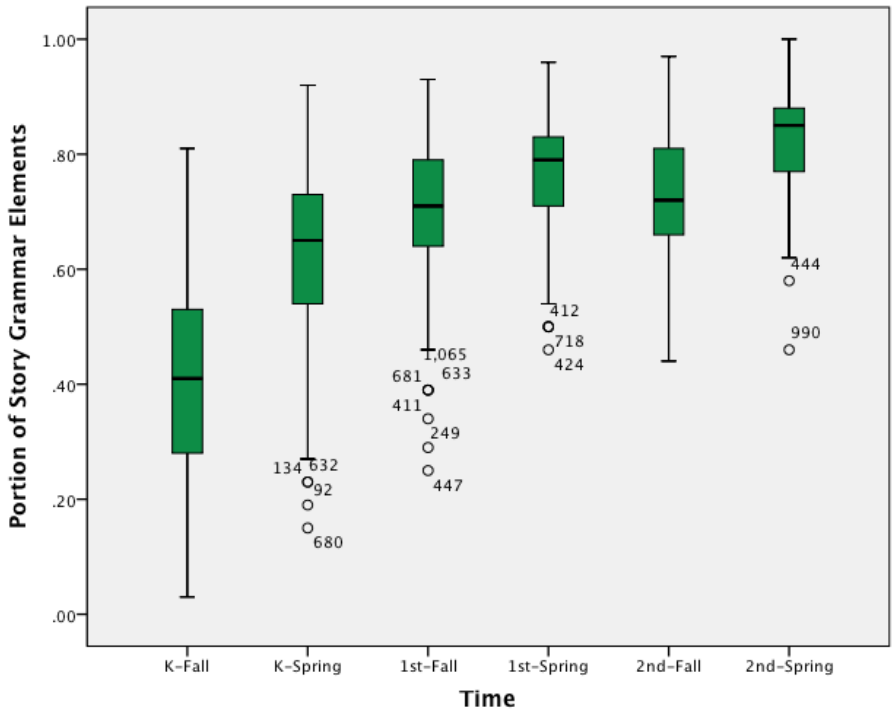


Figure 7. Boxplots of the Portion of Story Grammar Elements Index for all participants at all time points.

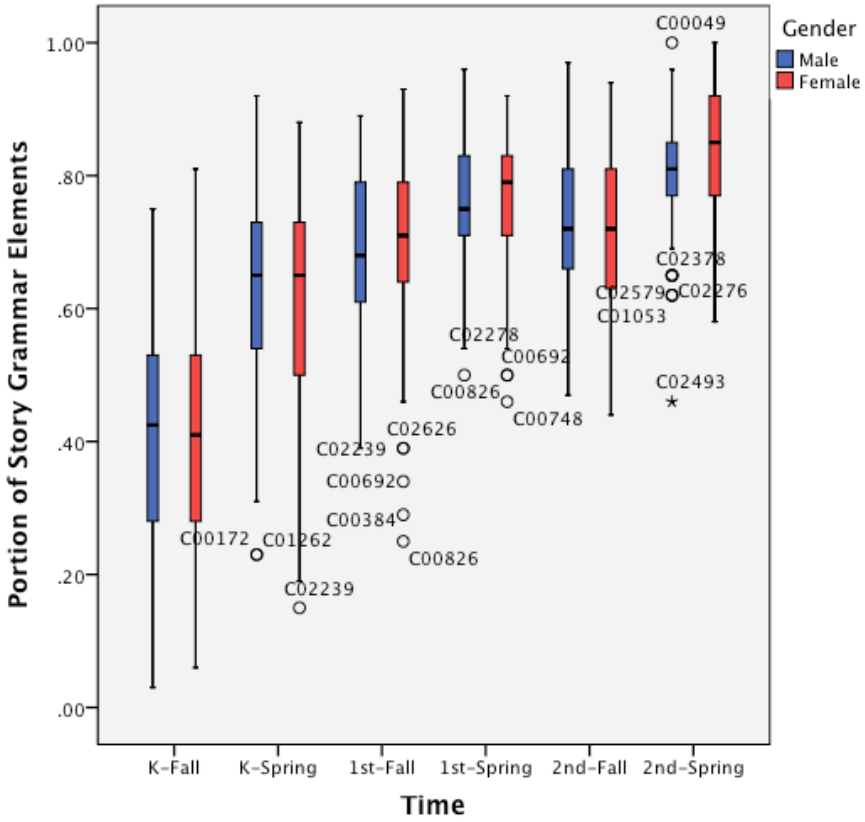


Figure 8. Boxplots of the Portion of Story Grammar Elements Index for males and females at all time points.

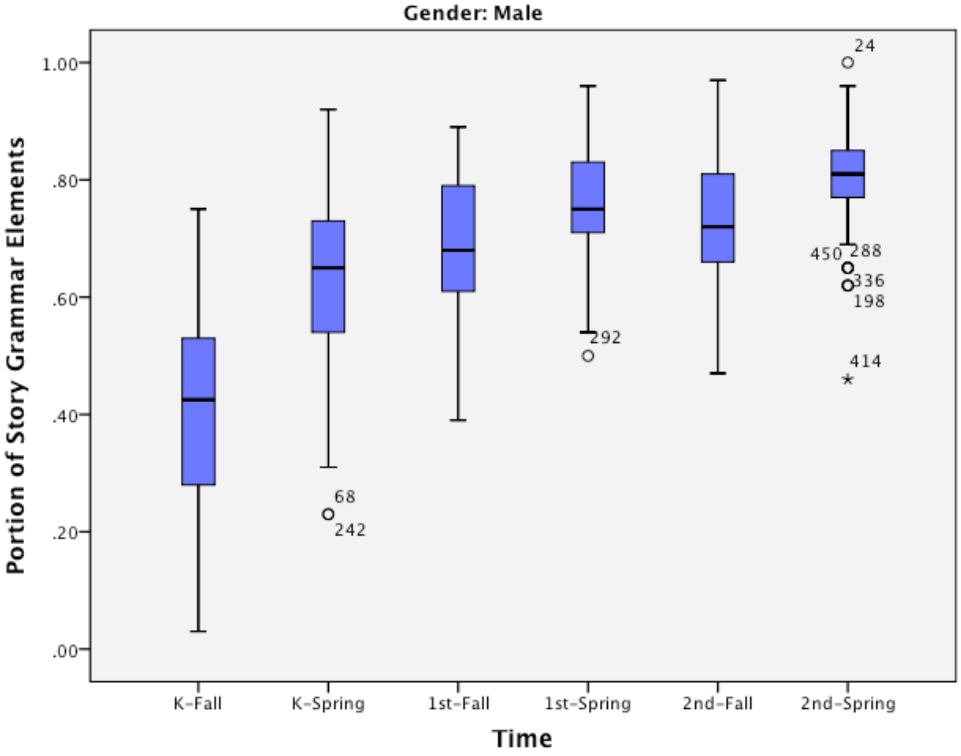


Figure 9. Boxplots of the Portion of Story Grammar Elements Index for males at all time points.

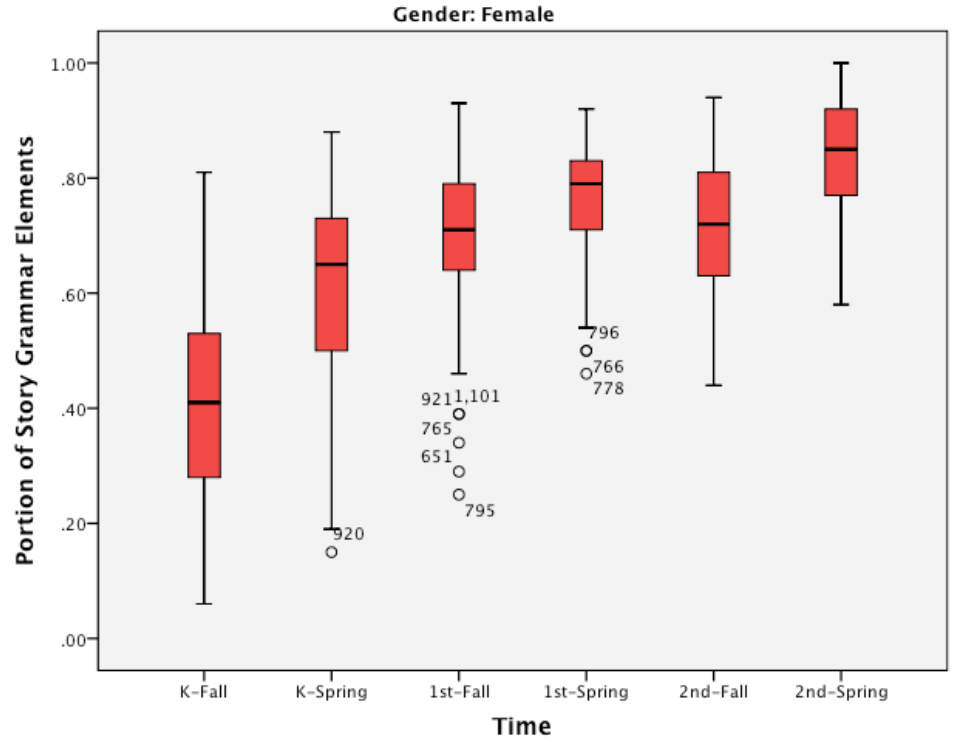


Figure 10. Boxplots of the Portion of Story Grammar Elements Index for females at all-time points.

Appendix L

Scatterplots and Boxplots of EC Index Performance at each Wave

Scatterplots and Boxplots of EC Index Performance at each Wave

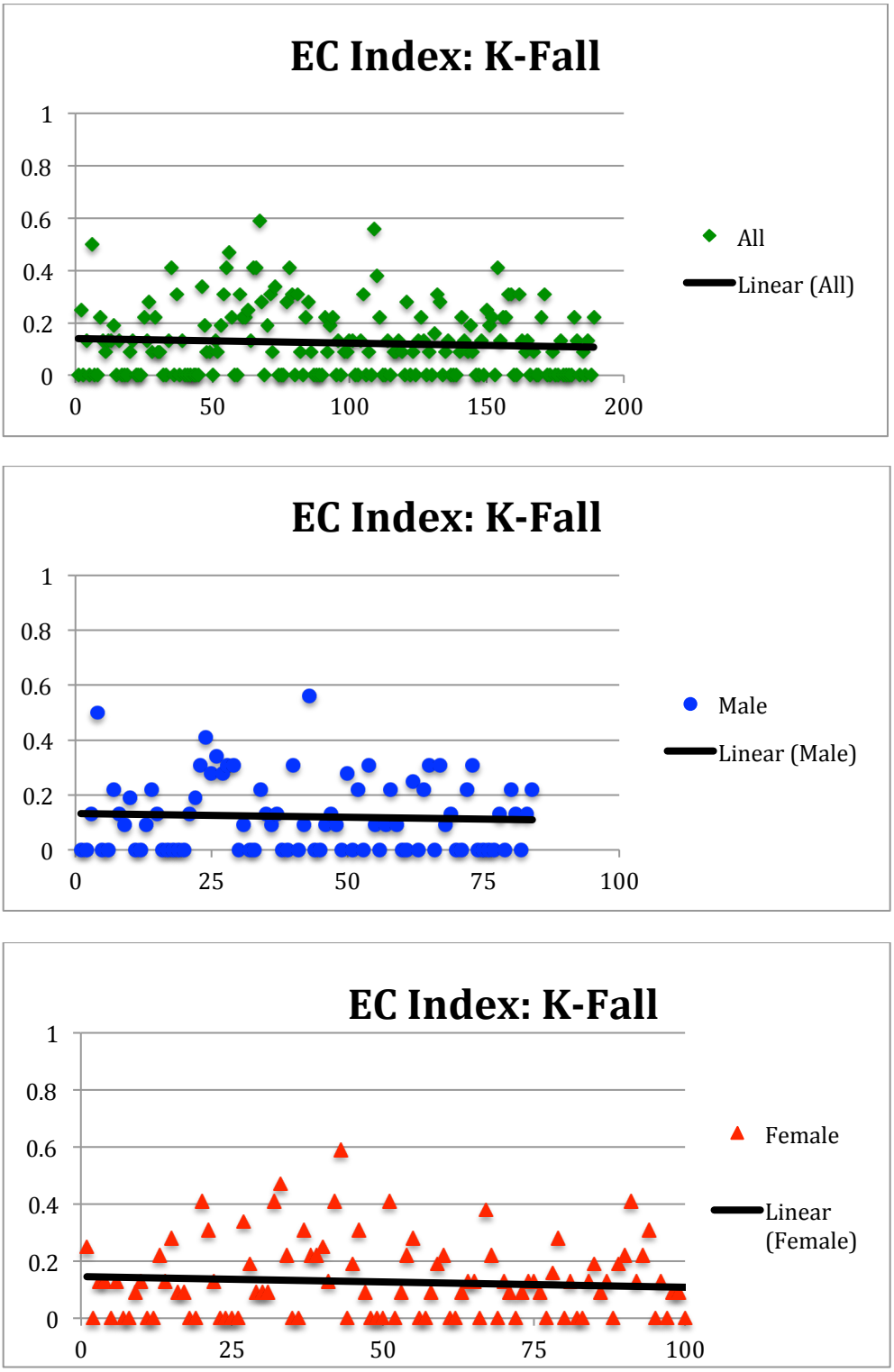


Figure 1. Scatterplots of Episodic Complexity (EC) Index at fall of Kindergarten for all participants, males, and females with trend lines.

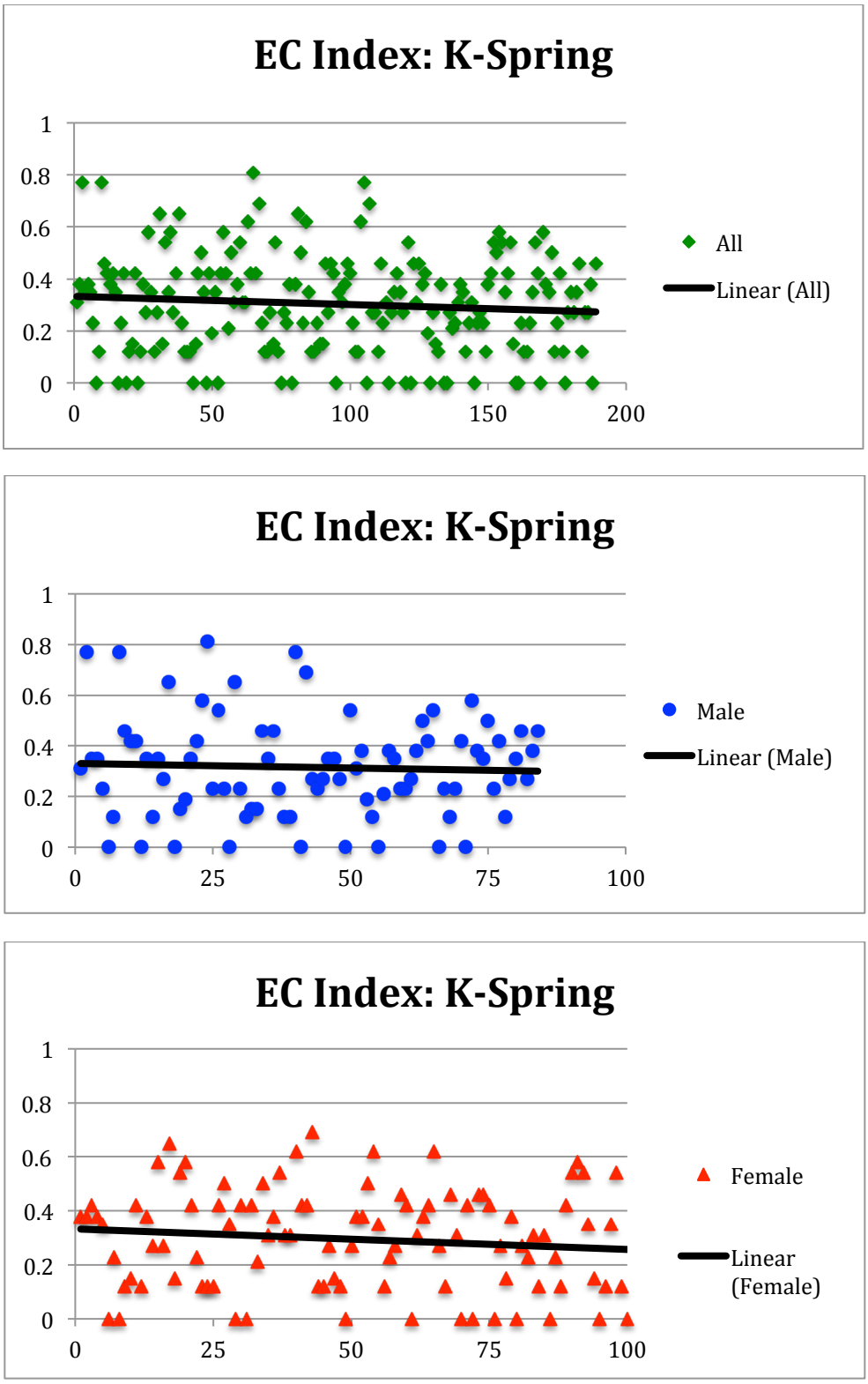


Figure 2. Scatterplots of Episodic Complexity (EC) Index at spring of Kindergarten for all participants, males, and females with trend lines.

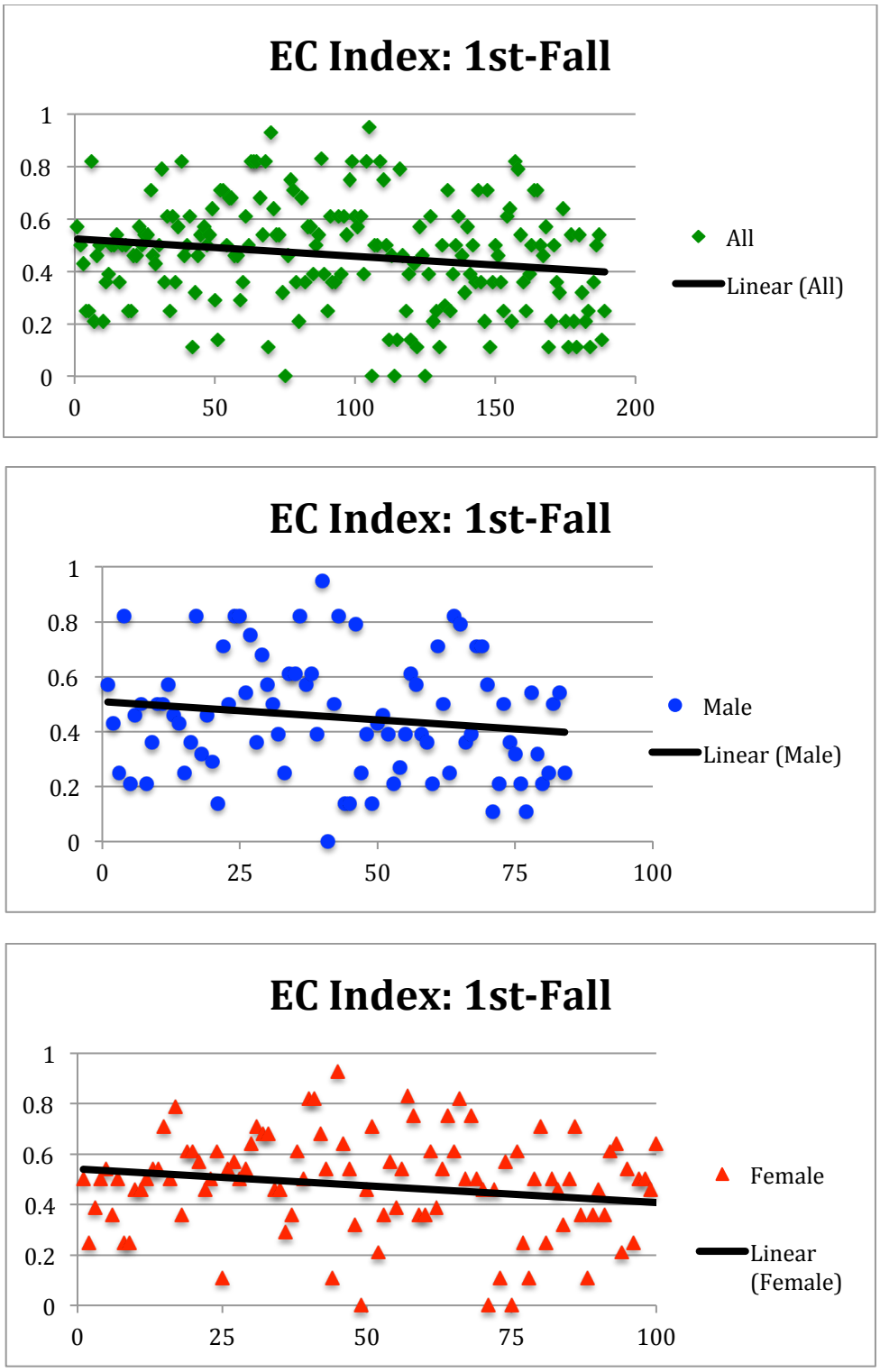
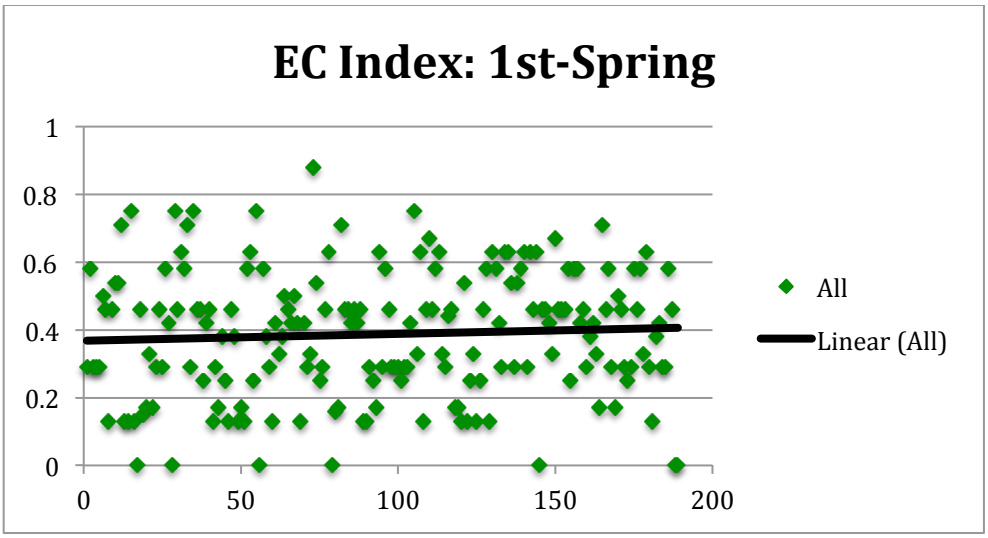
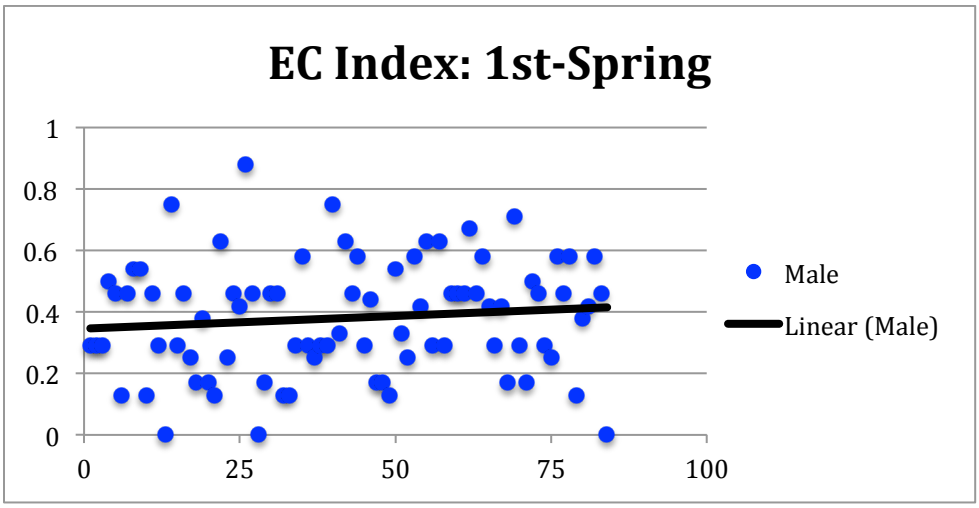


Figure 3. Scatterplots of Episodic Complexity (EC) Index at fall of 1st grade for all participants, males, and females with trend lines.





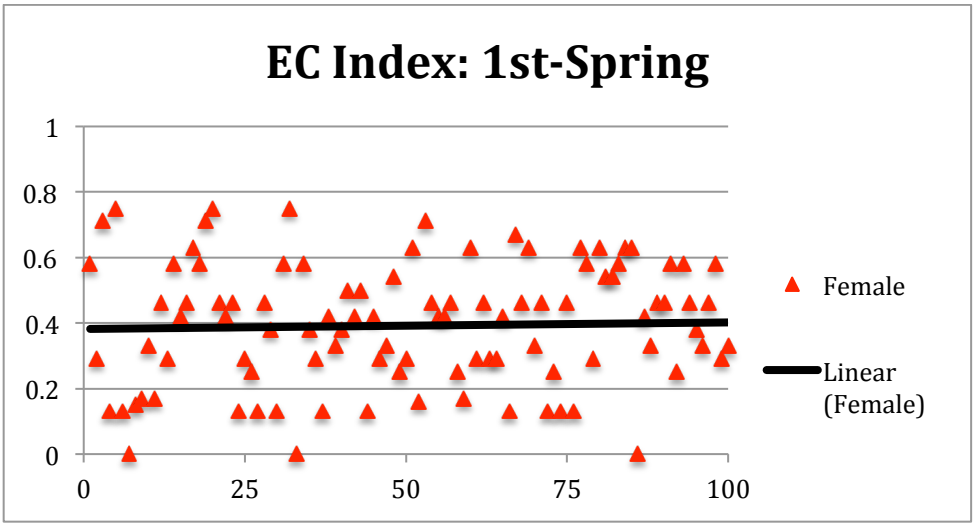


Figure 4. Scatterplots of Episodic Complexity (EC) Index at spring of 1st grade for all participants, males, and females with trend lines.

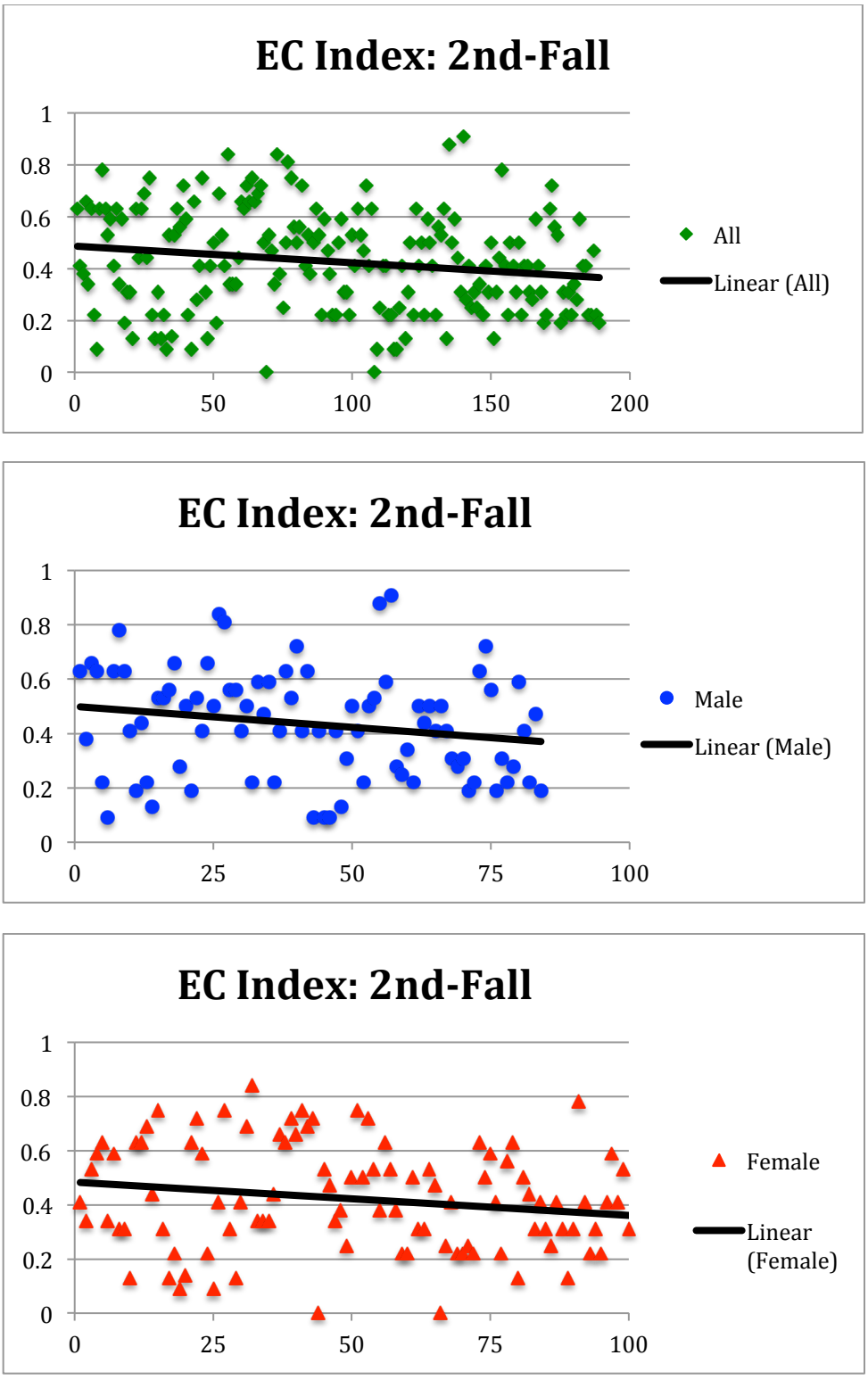
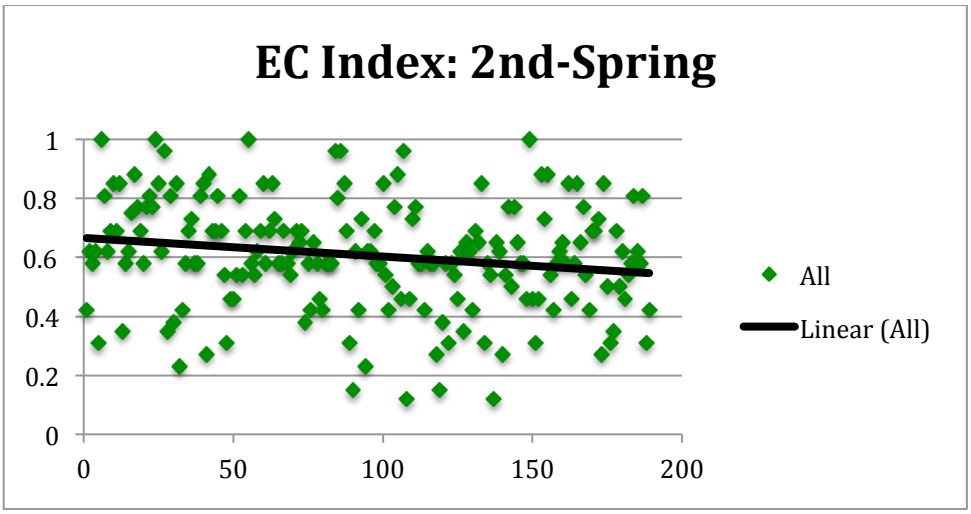
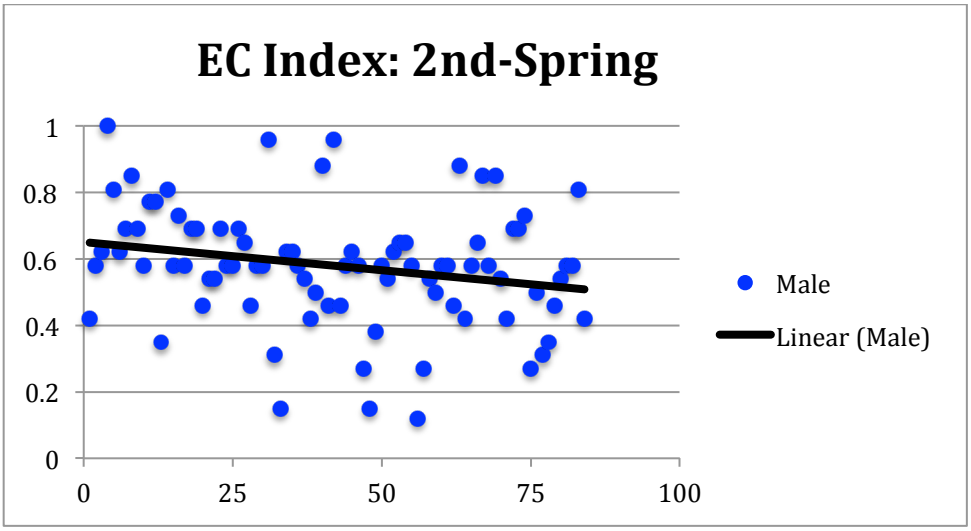


Figure 5. Scatterplots of Episodic Complexity (EC) Index at fall of 2nd grade for all participants, males, and females with trend lines.





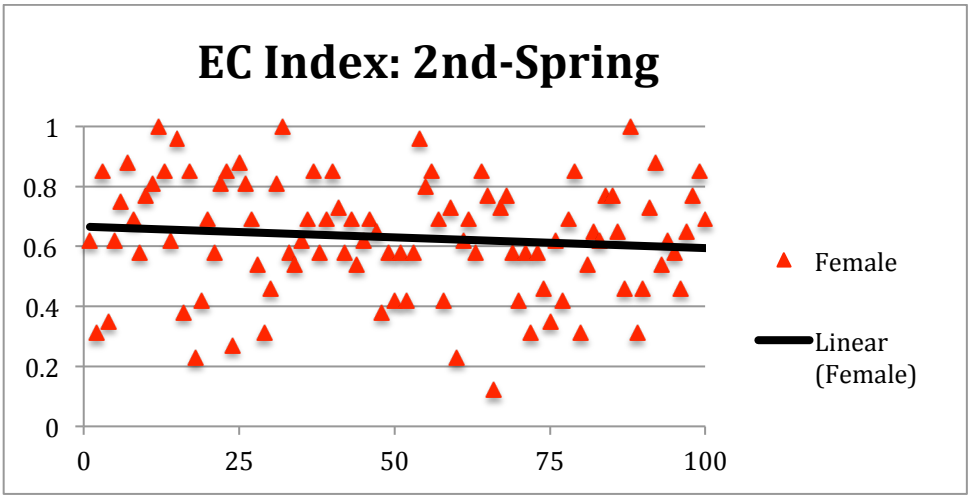


Figure 6. Scatterplots of Episodic Complexity (EC) Index at spring of 2nd grade for all participants, males, and females with trend lines.

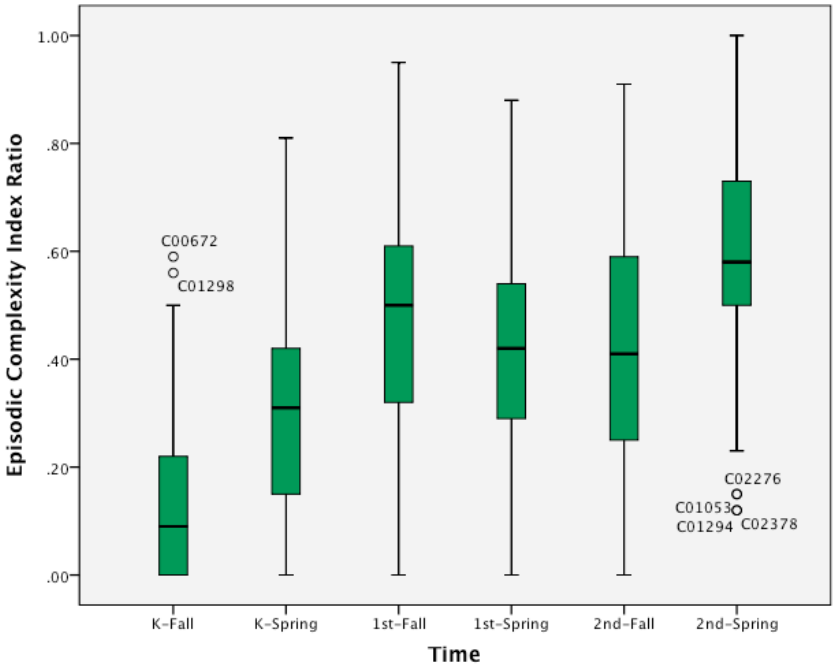


Figure 7. Boxplots of the Episodic Complexity Index Ratio for all participants at all time points.

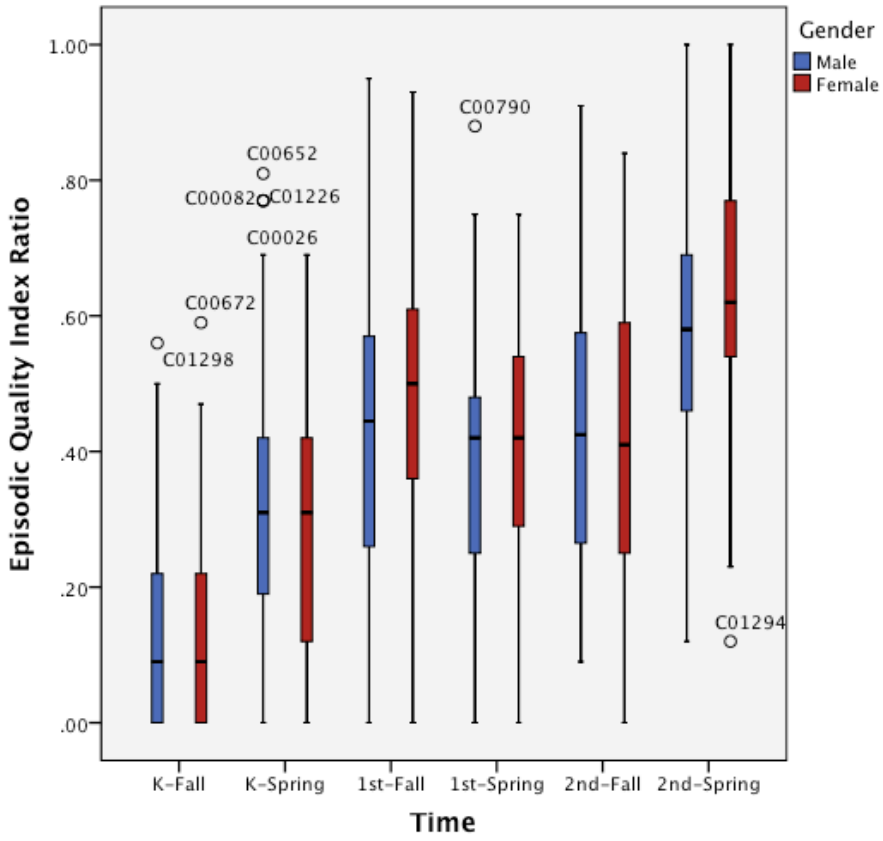


Figure 8. Boxplots of the Episodic Complexity Index Ratio for males and females at all time points.

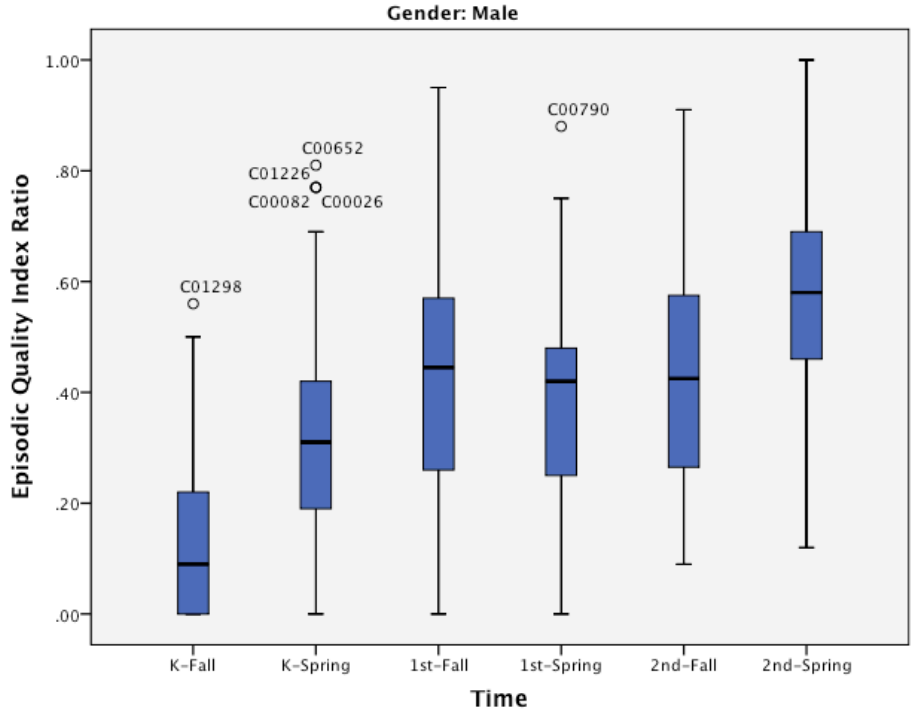


Figure 9. Boxplots of the Episodic Complexity Index Ratio for males at all time points.

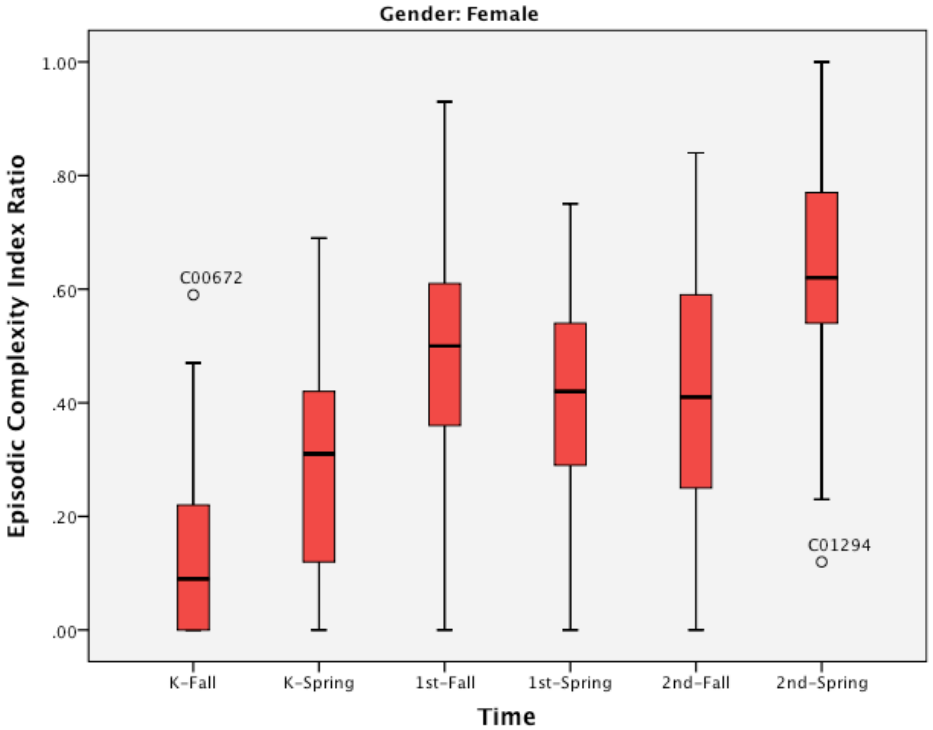


Figure 10. Boxplots of the Episodic Complexity Index Ratio for females at all time points.

Appendix M

Scatterplots of PSGE Index by English Language Proficiency

Scatterplots of PSGE Index by English Language Proficiency

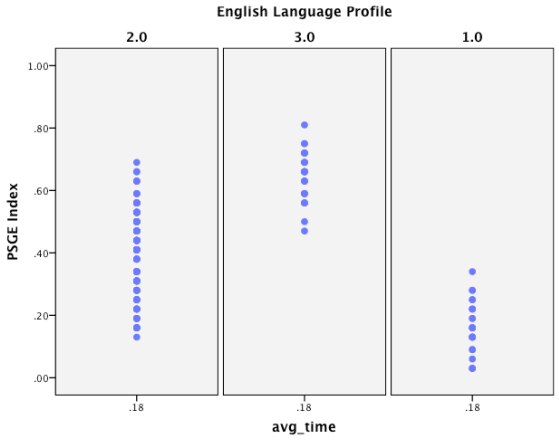


Figure 1. Scatterplot of PSGE Index by English language profile at Wave 1; "1" = one standard deviation below average, "2" = within the average range, and "3" = at least one standard deviation above average.

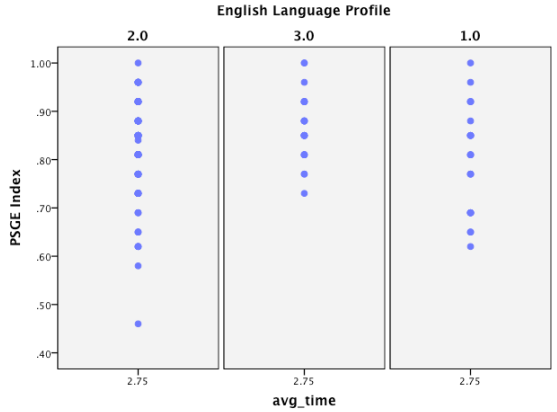


Figure 2. Scatterplot of PSGE Index by English language profile at Wave 6; "1" = one standard deviation below average, "2" = within the average range, and "3" = at least one standard deviation above average.

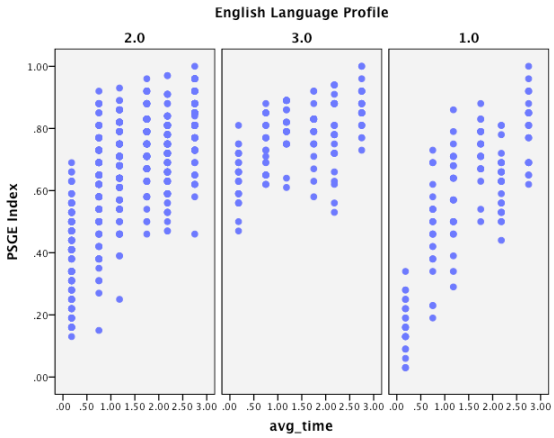


Figure 3. Scatterplot of PSGE Index by English language profile over the entire study; "1" = one standard deviation below average, "2" = within the average range, and "3" = at least one standard deviation above average.

Appendix N

Scatterplots of EC Index by English Language Proficiency

Scatterplots of EC Index by English Language Proficiency

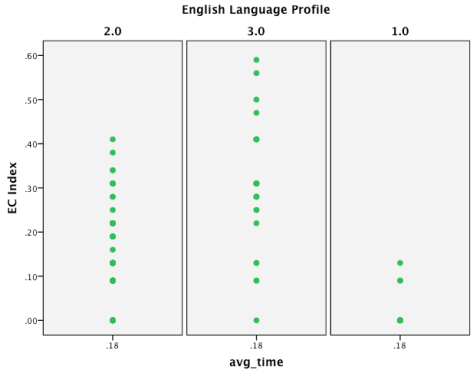


Figure 1. Scatterplot of PSGE Index by English language profile at Wave 1; "1" = one standard deviation below average, "2" = within the average range, and "3" = at least one standard deviation above average.

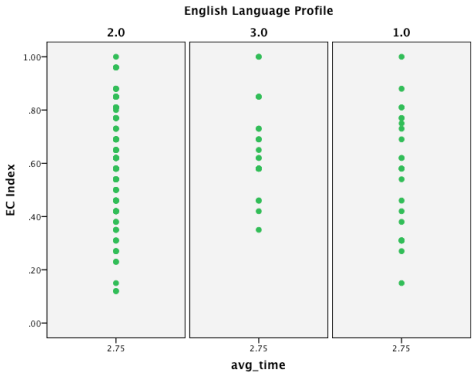


Figure 2. Scatterplot of PSGE Index by English language profile at Wave 6; "1" = one standard deviation below average, "2" = within the average range, and "3" = at least one standard deviation above average.

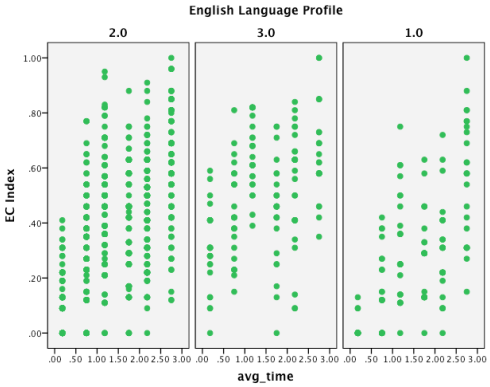


Figure 3. Scatterplot of EC Index by English language profile over the entire study; "1" = one standard deviation below average, "2" = within the average range, and "3" = at least one standard deviation above average.

CURRICULUM VITAE

Abbie L. Olszewski, M.A., CCC-SLP

PROFESSIONAL SUMMARY

I am a speech language pathologist and public school researcher. In addition to a decade of clinical practice in the field, I have had varied professional academic experiences. I created undergraduate courses and specialized programs from conception to application, designed and executed research studies with a diverse population of children, taught in classrooms, provided online instruction, and educated children and families in their homes. I am dedicated to my field and have given back by developing an open source SLP program for people in developing countries, volunteered to provide services in Spanish-speaking countries, and served as a committee member for ASHA conventions. I love my work and am committed to enhancing the lives of others through my efforts as a researcher, teacher, and clinician.

Public School Researcher • Interdisciplinary Collaborator • Online Teacher • Grant Writer • Expert Clinician Relationship Builder • Course Creator • Special Program Developer • Lab Manager • Level 3 NIRS User • Sensitive to Needs of Culturally and Linguistically Diverse Learners • Self-Starter Team Leader • Evidence-Based Decision Maker • Professional Development Trainer • Award Recipient

EDUCATION

Ph.D. Utah State University, Logan, UT *Expected Graduate Date: Summer 2013*
Disability Disciplines program
Specialization: Speech-Language Pathology, Sub-specialization: Language and Literacy
Dissertation: *A longitudinal study of English narrative development in young Spanish-English bilinguals*
Advisor: Sandi L. Gillam, Ph.D., CCC-SLP

M.A. Northern Illinois University, DeKalb, IL *May 1998*
Speech-Language Pathology

B.S. Northern Illinois University, DeKalb, IL *May 1996*
Major: Communicative Disorders, Minor: Spanish

Spanish Language Immersion *June – July 2011*
Costa Rican Culture and Language Institute (Instituto de Cultural y Lengua Costarricense)
Alajuela, Costa Rica
80 hours of Spanish language immersion instruction, 5 hours of cultural workshops

PROFESSIONAL EXPERIENCE

Over a decade of experience working with children on language and literacy development in a variety of settings from home-based early intervention to high school classrooms and with diverse populations ranging from low-resource urban communities to affluent suburbs. Extensive

experience as a professional development coach providing curriculum and training for preschool and kindergarten teachers and leaders of after-school programs.

June 2012 – Present **Private Speech Language Pathologist** *Cache Valley & Box Elder County*

- Delivered speech language therapy to families who had youngsters with communication difficulties in the home setting.

October 2010- Present **After School Tutoring Program Director,** Utah State University
Logan, UT

- Created a reading tutoring program from the ground up under the direction of Dr. D. Ray Reutzel at the Emma Eccles Jones Early Childhood Research Center's Language and Literacy Clinic at Utah State University.
- Designed and developed framework for Tier 2 tutoring program, selected curriculum, recruited tutors and tutorees, trained tutors, coordinated testing, and supervised tutors.
- Created and taught TEAL 5560, a clinical practicum course, for undergraduate teachers-in-training to correspond with tutoring program.
- Created free ibook titled *USU After School Tutoring Program- Spring 2012,* which can be accessed through iTunes store by entering the title.

September 2010- **Early Intervention Speech-Language Pathologist,** Up-to-Three Program
Logan, UT

January 2011

- Provided evaluations and therapy to families with children who had speech and language disorders in the home setting through the Center for Persons with Disabilities at Utah State University.

Jan 2010-August 2011 **Research Coordinator,** Child Language Research Lab
Logan, UT

- Coordinated scheduling and training of 22 research assistants to administer tests, transcribe language samples, and score tests for different projects under direction of Drs. Sandi and Ron Gillam at Utah State University.

Sep 2009-May 2011 **Graduate Student Clinical Supervisor,** USU Speech & Hearing Clinic
Logan, UT

- Supervised graduate students conducting outpatient evaluations and clinical speech-language pathology services.
- Prepared graduate students in selection of assessments, supervised evaluations, reviewed written evaluations, and graded graduate student progress.

Aug 2006-Aug 2009 **Senior Professional Development Coach**, Leap Learning Systems
Chicago, IL

- Created and/or delivered language and literacy curricula, *Vocabulary Improvement Project (VIP), Lending Library (LL)*, *Language through Science (LtS)*, *Language for Scholars (LFS),* and *Leap After School Enrichment Program (LASER)* to Chicago Public School teachers.
- Created authentic assessments to measure student progress and whether teachers and leaders were implementing specified curriculum.
- Supervised volunteers, interns, and program assistants.
- Presented at state, national, and international conferences.
- *After-School Project Manager*. Supervised testing, professional development, and implementation of programming delivered to five site directors, 25 leaders, and 560 students in first through eighth grade. Collaborated with client, By The

Hand Club For Kids, to author three tailored curricula to encourage language and literacy development while integrating local history, environmental issues, and science concepts. Student work culminated into three projects: *Chicago Legacy Project, Cool Globes*, and *3M Discovery Young Scientist* and were exhibited at museums and schools across the city.

• *Preschool Project Manager.* Supervised implementation of VIP and LtS programs at an early childhood development center that incorporated the Reggio Emilia philosophy and served 350 students, most of whom were bilingual. Managed testing, professional development, and curricula implementation for 24 teachers and assistants.

Aug 2001-Aug 2009 **Independent SLP Contractor** *Chicago, IL and its suburbs*

• Contracted with the state of Illinois as an Early Intervention Speech Therapy Provider serving families and their children aged birth to three years old in their homes.

• Provided speech-language services to children aged three to five in Head Start programs as a contractor with *Pediatric Populations* in Highland Park, IL and *Speech Source* in Chicago, IL.

• Participated in research by administering a new articulation test, Clinical Assessment of Articulation and Phonology (CAAP), from Super Duper Publications Greensboro, South Carolina. Assisted in updating norms for SPELT from Janelle Publications in DeKalb, IL.

Aug 2002-Aug 2006 **Contract Speech-Language Pathologist,** New Trier High School *Winnetka, IL*

• Employed through Gottfred-Lybolt Speech Associates in Northbrook, IL to a 3-1 high school campus.

• Collaborated with World History, English, Biology and Special Education high school teachers to implement language-based instruction.

• Incorporated curriculum-based therapy materials, assessed students, developed Individualized Education Plans (IEP) for a caseload of 60 students in grades nine through twelve on two high school campuses.

• Served students with disabilities that included stuttering, language delays, autism, severe-profound cognitive delays, agenesis of corpus callosum, and articulation.

• Served as an assistant coach for the girls' bowling and varsity softball teams.

Aug 2000-Aug 2002 **Elementary School Speech Language Pathologist**, CPS *Chicago, IL*

• Served a diverse population of students with communicative disorders in several Chicago Public Schools; Sandoval Elementary, Goodlow Elementary, Jesse Sherwood and Myra Bradwell; over a two-year period on the south and southwest sides of Chicago.

•Extensive experience working with predominantly Latino or African-American student populations. Also had experience with complex scheduling and service issues in multi-track, year-round school.

June 1999-Aug 2000 **Part-time Speech-Language Pathologist,** Rehab Care Therapy Service *LaGrange, IL*

• Evaluated and treated dysphagia and language disorders for a geriatric population at a skilled nursing facility.

• Worked closely with dietician to recommend safe food consistencies for patients.

Aug 1998-Aug 2000 **Contract Elementary School Speech-Language Pathologist** *Berwyn, IL*

• Conducted speech-language services for students at Jefferson Elementary in both self-contained and mainstream classrooms from preschool through fifth grade through a contract with MacNeal Hospital.
• Developed computerized, district-wide progress reports and goals.
• Employed part-time as therapist for pediatric outpatients at MacNeal hospital.

June - Sept 1998 **Graduate Student Speech Language Pathologist**, St. Mary's Hospital and Medical Center *San Francisco, California*
• Served adults in AIDS/dementia care unit, skilled nursing facility, rehabilitation, and outpatient areas.
• Incorporated Deep Pharyngeal Neuromuscular Stimulation (DPNS), Neurodevelopmental Treatment (NDT) and myofascial release into therapy.

March - May 1998 **Graduate Student Speech Language Pathologist,** Alameda Unified School District*, Alameda, California*
• Provided therapy and evaluation to children in two special education preschool classes and a regular education elementary school.
• Proficient in Picture Exchange Communication System (PECS).

Jan - March 1998 **Graduate Student Speech Language Pathologist,** Rehabilitation Institute of Chicago*, Chicago, IL*
• Worked with adults diagnosed with traumatic brain injuries, right and left cerebral vascular accidents, anoxia, dysarthria, and dysphagia
• Assisted with therapy for spinal cord injuries and evaluation for augmentative communication devices
• Designed information fact sheets for patients and families regarding tracheotomy tubes and respiratory system.

TEACHING INTERESTS

My teaching interests include topics in language and literacy development, cultural and linguistically diverse populations, and language and literacy development and acquisition. In addition to traditional lectures, I like to incorporate cooperative learning experiences whenever possible to foster the development of skills to prepare students to engage in working on multi-disciplinary teams. I also am interested in enhancing the experiences of students taking online courses.

TEACHING EXPERIENCE

Spring 2013 Utah State University, **Instructor**, undergraduate course
TEAL 5560: RTI: Tier 2 Instruction
Advisor: D. Ray Reutzel, Ph.D.

Spring 2013 Utah State University, **Teaching Assistant**, undergraduate online course
COMD 5100 Language Science using Canvas platform
Advisor: Sonia Manuel-Dupont, Ph.D.

Fall 2012 Utah State University, **Instructor**, undergraduate course
TEAL 5560 RTI: Tier 2 Instruction
Advisor: D. Ray Reutzel, Ph.D.

Fall 2012 Utah State University, **Teaching Assistant**, undergraduate online course

	COMD 5100 Language Science using Canvas platform Advisor: Sonia Manuel-Dupont, Ph.D.
Summer 2012	Utah State University, **Teaching Assistant**, undergraduate online course COMD 5100 Language Science using Canvas platform Advisor: Sonia Manuel-Dupont, Ph.D.
Spring 2012	Utah State University, **Teaching Assistant**, undergraduate online course COMD 5100 Language Science using Canvas platform Advisor: Sonia Manuel-Dupont, Ph.D.
Fall 2011	Utah State University, **Instructor,** undergraduate course COMD 2600 optional course Systematic Analysis of Language Transcription (SALT) Advisor: Sandi Gillam, Ph.D.
Fall 2011	Utah State University, **Co-Instructor**, undergraduate course COMD 2600 Introduction to Communicative Disorders Advisor: Sandi Gillam, Ph.D.
Fall 2011	Utah State University, **Teaching Assistant**, undergraduate online course COMD 5100 Language Science using Canvas platform Advisor: Sonia Manuel-Dupont, Ph.D.
Summer 2011	Utah State University, **Teaching Assistant**, undergraduate online course COMD 5100 Language Science using Blackboard platform Advisor: Sonia Manuel-Dupont, Ph.D.
Fall 2010	Utah State University, **Guest Lecturer**, undergraduate course COMD 2600 Introduction to Communicative Disorders Advisor: Sandi Gillam, Ph.D.
Summer 2010	Utah State University, **Teaching Assistant and Guest Lecturer,** graduate level course COMD 6020 Diagnosis and Intervention with School-Age Children Advisor: Ron Gillam, Ph.D.

RESEARCH INTERESTS & EXPERIENCE

My primary research interests include child language and literacy development and disorders, parent and teacher training of language skills, distance teaching, speech-language intervention in international communities, and evidence-based practices. Of particular interest are children from at-risk and culturally and linguistically diverse populations.

Co-PI with Sandi Gillam**,** PI, *A longitudinal study of English narrative development in young Spanish-English bilinguals* *May 2012 - Present*

- The purpose of the dissertation is to examine the longitudinal macrostructure narrative growth patterns (initiating event, action, obstacle, consequence) of English fictional narratives retold by two hundred four Spanish-English Bilingual (SEB) children who matriculated from kindergarten through the end of second grade. Children's narrative re-tells were measured at six different time points biannually (in October and May of each school year).
- Data is a subset of a larger national study titled Biological and Behavioral Variation in the Language Development of Spanish-Speaking Children (BVLDSC), which was awarded by the

U.S. Department of Education's Development of English Literacy in Spanish-Speaking Children Research Program and the Institute of Education Sciences in 2002.

Co-Author with Nicole Pyle, PI, *Expository text structure interventions and effects on comprehension: A research synthesis.* *January 2012 - Present*

- Collaborated to decide key search terms, conducted searches with search terms, reviewed abstracts, determined if articles were aligned with research questions, coded articles, conducted ancestral search, wrote sections of manuscript.
- Assisted PI in making key decisions regarding inclusion and exclusion of articles and took on the second largest search and duties.
- Worked with statistician to prepare information for meta-analysis section.

Researcher for *Test-Retest Reliability of fNIRS to Tissue Oxygenation Levels in Response to Linguistic Stimulation* *April 2011 - Present*

- Assisted in developing research questions, designed and developed task stimuli, and ran participants in reliability testing of NIRS looking at brain activity by changes in oxygenated and deoxygenated hemoglobin levels in the brain. Future plans include assisting in analysis of data and assist in writing the manuscript.
- Level 3 NIRS User- scanned a minimum of 20 participants.

Co-PI with Kristina Blaiser, PI**,** *Feasibility Study of Narrative Language Analysis for Preschoolers with Hearing Loss* *January 2011 - Present*

- Designed a pilot study to determine ways to assess language skills and progress monitoring tools for preschool children with hearing loss.
- Designed project and research questions, coordinated testing of participants, collected data, analyzed statistical data, and prepared poster and lecture presentations.
- Line of inquiry further developed into the following titled studies: *Understanding Linguistic Complexity of Sentence Recognition Tasks: Implications for Preschool Populations,* Using Narrative for Preschool Children with Hearing Loss, and *Expressive language of preschoolers with hearing loss: The use of narratives to elicit language productivity and complexity*

Research Assistant, *Comparison of Bilingual Education Programs*, Lillian Duran *Summer 2010*

- Study examined the impact of differing levels of bilingual education in preschool and elementary school.
- Administered Preschool Language Scale-4 in English to bilingual kindergarteners.

Co-Investigator, *Training the Use of Scholarly Language with At-Risk Adolescents*
Spring 2010 - Present

- Coordinated training, testing, intervention, and data collection for 79 participants.
- Analyzed and interpreted data.

Language Research Coordinator, IES Narrative Development Grant, Sandi Gillam
Summer 2009 - Present

- Developing a narrative language intervention program for improving spoken language proficiency.
- Coordinate training, testing, and scoring of language testing for multi-phase intervention program.

Language Research Coordinator, Value Added Project, Sandi Gillam *Spring 2010*

- Trained and supervised 20 undergraduate students of Communicative Disorders to administer, score, and analyze the bilingual testing of the TNL, research-created vocabulary assessment, and research-created writing evaluation of 40 first-grade children.
- Created codebook and spreadsheet for data entry.

- Assisted undergraduates in analyzing and summarizing results to prepare papers for state and national conferences.

Research Assistant, Diagnostic Markers, Ron Gillam *Fall 2009*

- Longitudinal study of elementary school-aged bilingual children to determine if English or Spanish language assessments mark for speech-language impairment.
- Transcribed English language samples of bilingual English narratives elicited by re-telling frog stories using Systematic Analysis of Language Transcripts (SALT) software.

Research Assistant, Video Paired-Stimulus Preference Assessment, doctoral student Katie Snyder and faculty Tom Higbee *Fall 2009*

- Feasibility study examining whether children with Autism make preference assessments of concrete and abstract objects/concepts using video samples to make preference selection.
- Conducted sessions and took IOA data for doctoral student research project.

PUBLICATIONS

Pyle, N., Gillam, S., **Olszewski, A**., Hartzheim, D., Segura, H., Wheeler, A., & Laing, W. (*in preparation*). *Expository text structure interventions and effects on comprehension: A research synthesis.* Targeted journal: *Reading Research Quarterly*

Olszewski, A. & Gillam, S. (*in preparation*). The transfer effects of oral narration on writing measures for monolingual English and Spanish-English Bilingual children. Targeted journal: *English Linguistics Research*

Olszewski, A., & Gillam, R., (*in preparation).* A systematic review of the impact of television on dual language learners' language and literacy skills. Targeted journal: *English Language Teaching*

Olszewski, A. & Gillam, S. (*in preparation*). Verbal and non-verbal presentation skills: Supporting the CCSS for at-risk adolescents. Targeted journal: *Language, Speech, and Hearing Services in Schools*

Gillam, S., & Fargo, J., Foley, B., & **Olszewski, A**. (2010). A nonverbal phoneme deletion task administered in a dynamic assessment format. *Journal of Communication Disorders*. (5-year impact factor, 2.28; Ranking 7/51).

Lybolt, J., Applebaum, B., & **Olszewski, A.** (2009). *Language Through Science Pre-K Curriculum.* Chicago, IL: Leap Learning Systems.

Lybolt, J., **Olszewski, A,** & Preschern, J., (2007 & 2008*). Leap Learning System's After-School Enrichment Program (LASER).* Leap Learning Systems. Chicago, IL: Leap Learning Systems.

Contributor, The Clinical Assessment of Articulation and Phonology (CAAP), norm-referenced instrument that assesses the articulation and phonology of preschool and school age children. Participated in administering tests for norms.

PRESENTATIONS

International

Olszewski, A., Frank, E. & Staley, B. (Jan 2012). *A Free Globally-Available Training in Speech Language Pathology*, 4th East African Speech Therapy Conference, Kampala, Uganda. (Poster session)

Gottfred, K. & **Olszewski, A.** (Sep 2008). *How Poverty Affects Childhood Development (with a focus on language)*, 2nd East African Speech Therapy Conference, Nairobi, Kenya. (1hour seminar)

Olszewski, A. (Sep 2008). *Connecting Cultures through Speech Language Therapy Practices,* 2nd East African Speech Therapy Conference, Nairobi, Kenya. (1hour seminar)

National

Olszewski, A. & Gillam, S. (Nov 2012). Transfer Effects of Oral Narrative Training on Written Language. American Speech-Language Hearing Association Convention, Atlanta, Georgia. (Half an hour seminar)

Olszewski, A. & Gillam, S. (Nov 2011). *Teaching Presentation Skills that Align with Core State Standards to At-Risk Adolescents.* American Speech-Language Hearing Association Convention, San Diego, California. (Poster session)

Blaiser, K. & **Olszewski, A.** (Nov 2011). Using Narrative for Preschool Children with Hearing Loss. American Speech-Language Hearing Association Convention, San Diego, California. (1 hour seminar)

Blaiser, K., **Olszewski, A**., & Preston, E. (Nov 2011). Understanding Linguistic Complexity of Sentence Recognition Tasks: Implications for Preschool Populations. American Speech-Language Hearing Association Convention, San Diego, California. (Poster session)

Olszewski, A. & Blaiser, K. (Feb 2011). *Feasibility Study of Narrative Language Analysis for Preschoolers with Hearing Loss.* National Early Hearing, Diagnosis, and Intervention Conference, Atlanta, GA. (Poster session)

Gillam S, & **Olszewski, A.** (Nov 2010). *Classroom-Based Narrative Intervention for Diverse Learners, Session number 1074*, American Speech-Language Hearing Association Convention, Philadelphia, PA. (1 hour seminar)

Gillam S, & **Olszewski, A.** (Nov 2010). *Tracking Narrative and Literate-Language Progress (TNL-Pr): A Progress-Monitoring Tool, Session number 1601*, American Speech-Language Hearing Association Convention, Philadelphia, PA. (1 hour seminar)

Staley, B., Crowley, C., Bleile, K., Smith, A., & **Olszewski, A.** (Nov 2010). *International Clinical Experiences for SLP Students: Making it Work, Session number 2061*, American Speech-Language Hearing Association Convention, Philadelphia, PA. (2 hour seminar)

Lybolt, J. & **Olszewski, A.** (Nov 2008). *Collaboration Opportunities for SLP/Teacher Partnerships in Bilingual Settings, Session number 1170*, American Speech-Language Hearing Association Convention, Chicago, IL. (1 hour seminar)

Lybolt, J. & **Olszewski, A.** (Nov 2008). *Preschool Science & Measurement: An Exciting Format for SLP & Preschool/Kindergarten Teacher Collaboration, Session number 2292,* American Speech-Language Hearing Association Convention, Chicago, IL. (2 hour seminar)

Lybolt, J., Applebaum, B., & **Olszewski, A**. (Nov 2007). *Language Through Science: Encouraging Exploration in the Preschool Classroom,* National Association for the Education of Young Children, (NAEYC), Chicago, IL. (3 hour seminar)

Olszewski, A. & Preschern, J. (Oct 2007). *Creating a Story Project Curriculum & Enthusiasm for Writing in After-School Programming*, The National Black Child Development Institute (NBCDI), Chicago, IL (1.5 hour seminar)

Lybolt, J., Staley, B., & **Olszewski, A.** (Nov 2006). *Keeping the Dust off Your Lending Library,* American Speech-Language Hearing Association Convention, Miami, FL (poster session)

Regional

Pyle, N., Gillam, S., **Olszewski, A.,** Hartzheim, D., Segura, H., Wheeler, A., & Laing, W. (2013). *Text structure interventions with expository text and effects on comprehension: A research synthesis*. Pacific Coast Research Conference, San Diego, CA (Poster).

Pyle, N., Gillam, S., **Olszewski, A**., Segura, H., Hartzheim, D. Laing, W., & Wheeler, A. (2012). *Teaching text structure to students with learning difficulties: A review of the research and implications for practice.* Utah State Effective Practices Annual Conference, Logan, Utah (Seminar).

Squires, K & **Olszewski, A**. (October 2011). *How SLPs Can Help Teachers Address Mediating Factors Underlying Phonological Awareness Skills.* Intermountain Area Speech Language and Hearing Conference, Salt Lake City, UT (1 ½ hour seminar)

Olszewski, A. (2011). *Feasibility Study of Using Narrative Analysis System for Preschool Children with Hearing Loss*, Intermountain Graduate Research Symposium at Utah State University, Logan, UT. (Seminar)

Lybolt, J. & **Olszewski, A.** (Feb 2009). *Building Communication Skills in a Classroom Setting*, Illinois Speech Language Hearing Association Convention, Chicago, IL. (1 hour seminar)

Lybolt, J. & **Olszewski, A.** (Jan 2009). *Developing a Repertoire of Language Focused Science Based Activities,* Opening Minds Conference, Chicago Metro AEYC, Chicago, IL. (1.5 hours seminar, repeated)

Lybolt, J., Applebaum, B., & **Olszewski, A**. (Feb 2008). *Preschool Science and Measurement: Partnering Skills of SLPs and Teachers,* Illinois Speech Language Hearing Association Convention, Chicago, IL. (1 hour seminar)

Lybolt, J., Applebaum, B., & **Olszewski, A.** (Feb 2008). *Classbooks & Documentation for SLPs and Preschool Teachers,* Illinois Speech Language Hearing Association Convention, Chicago, IL. (poster session)

Lybolt, J., **Olszewski, A.,** & Wells, L. (Jan 2008). *Creative and Useful Data Gathering Techniques for Language in the Classroom.* Opening Minds Conference, Chicago Metro Association for the Education of Young Children (AEYC), Chicago, IL. (1.5 hours, repeated)

Lybolt, J., Applebaum, B., Staley, B., & **Olszewski, A**. (Feb 2007). *Developing Successful In-service and Professional Development Programs*, Illinois Speech Language Hearing Association Convention, Chicago, IL (1 hour)

Local

Lybolt, J. & **Olszewski, A**. (April 2008). *Excellent Science Opportunities Abound in Your Classroom,* Rush University Medical Center, Chicago, IL. (3 hours)

AWARDS AND HONORS

Council for Exceptional Children (CEC)- Division of Research Doctoral Student Scholar, 4th Cohort, 2011-2012

- Awarded to 10 doctoral students nationwide who demonstrate innovative research that will contribute to the filed of special education.

Chair of Student Committee for Early Hearing Detection and Intervention (EHDI) 2012 National Conference, St. Louis, MO, *March 5-6, 2012*

- Lead a committee of graduate students from Utah State University, Vanderbilt University, and University of North Carolina.
- Initiated new student activities including Facebook Group, Office Hours, Student Research Poster Awards, University Posters for LEND programs.

Koch Scholar Recipient, Utah State University, *January – May 2012*

- A unique scholarship program that gives USU students from a variety of academic disciplines the opportunity to read a variety of books (including economics, political science, science, philosophy and history) then meet on a weekly basis to engage in a discussion about the principles and concepts that are presented in the books.

Golden Key Recipient, Utah State University, *December 2011 – Present*

- Awarded to top-performing graduate students for academic excellence.

Doctoral Student Representative, Disabilities Discipline Doctoral Committee, *September 2011- April 2012*

- Nominated and voted by peers to participate in monthly meetings to represent doctoral student comments, concerns, and suggestions.

Graduate Research Assistant of the Year, Communicative Disorders and Deaf Education Department, April, 2011

Outstanding Graduate Student Speech-Language Pathology Researcher, Communicative Disorders and Deaf Education Department, April, 2011

Second Place Lecture Award in the Education and Rehabilitation Division, *March, 2011*

- *Feasibility Study of Using Narrative Analysis System for Preschool Children with Hearing Loss.*

Student Committee for Early Hearing Detection and Intervention (EHDI) 2011 National Conference

- Selected to help plan and conduct student-oriented experiences at the National EHDI 2011 Conference.
- Work with students from University of North Carolina and Vanderbilt universities.

Scholarship recipient for the Language and Literacy Multidisciplinary Sub-Specialization, Au*gust 2010 – May 2011*

- The primary goal of this sub-specialization is to prepare new PhDs in special education and speech-language pathology who have strong knowledge and experience in evidence-based language and literacy research, and personnel preparation.
- This track is supported by grant from the US Department of Education, which will provide financial support for doctoral students.

Leadership Trainee (2010-2011) for Facilitating Leaders in Speech-Language Pathology (FLSPA**)** Au*gust 2010 – May 2011*

- Only three departments across the United States received funding for this important leadership training program: USU, Vanderbilt University, and the University of North Carolina at Chapel Hill.
- The primary aim is to train a new set of interdisciplinary, multi-method leaders with the knowledge necessary to shape evidence-based clinical service delivery systems, public policy, clinical research, and continuing education in services to children with communication disorders.
- Over 300 hours of experiences and expertise gained in clinical, didactic and research and leadership experiences in the provision of community based, family centered, interdisciplinary

care of infants, children and youth with speech-language (or audiological) disorders and disabilities including those with co-morbid diagnoses.
- Training in legislative issues and processes, evidenced based practice, education and re/habilitation supports.

Award for Continued Education (ACE), American Speech Language Hearing Association, *December 2009 and December 2003*
- Earned required seven ASHA Continuing Education Units (CEUs) or 70 clock hours in less than three years.

Graduate Assistant, Northern Illinois University*, August to December 1996*
- Selected as a clinician for a family-based treatment program led by Dr. James Andrews serving families with children identified as benefiting from early intervention services. Served families with children who were on the autism spectrum.

GRANTS

American Speech-Language-Hearing Association (ASHA) Division 1 Language, Learning, and Education Starfish Mini-Grant Recipient, *March, 2010*
- Received award for project titled "Teaching Mainstream Communication Skills to At-Risk Adolescents" in the amount of $3,500.

Research Coordinator, (with Sandi Gillam, PI). Institute of Education Sciences, Reading, Writing, and Language, *August, 2009- Present*
- Developing a narrative language intervention program for improving spoken language proficiency.
- July, 2009- July, 2013- $1,450,000

American Education Research Association (AERA) Dissertation Grant, September 2012, Unfunded ($20,000)

American Speech Language Hearing Foundation's (ASHF) New Century Scholars Doctoral Scholarship, October 2012, Unfunded ($10,000)

EDITORIAL EXPERIENCE

Jul 2010 - Present **Guest Reviewer,** *Clinical Linguistics and Phonetics*
"Characterizing developmental language impairment in Serbian-speaking children: a preliminary investigation." July 2010

Jan 2010 - Present **Guest Reviewer,** *American Journal of Speech-Language Pathology Language, Speech, and Hearing Services in Schools*

Areas of expertise and key words: child language, multicultural, evidence-based, narrative, and comprehension

"Narrative Abilities of Children with and without Localization-Related Epilepsy" January 2010

PROFESSIONAL SERVICE

November 2012-
November 2013

Committee Member, ASHA 2013 Issues in Culturally and Linguistically Diverse Populations

- Suggested and invited speakers to present at national convention.
- Review and recommend conference proposals for convention in Chicago, Illinois.
- Topic Chair: Rob Fox

November 2011-
November 2012

Committee Member, ASHA 2012 Language Science Committee

- Collaborated with committee members to select invited speakers to present at national convention in Atlanta, Georgia.
- Reviewed conference proposals and recommended presentations to Topic Chair.
- Topic Chair: Sandi Gillam

August 2010- Present

Speech-Language Pathology Credential Director, Health Services Online, www.hso.info and www.NextGenU.org

- Addressing the need for higher education for health professionals in training from low-resource countries by creating a speech-language pathology program using comprehensive, easily-found, high quality, free, current courses, references, and other learning resources.
- Attended Consortium of Universities for Global Health (CUGH) September 2010 in Seattle, Washington.

July 2010

Service Learning Project, Orphanages in Nicaragua, via University of Northern Iowa, Managua, Nicaragua

- Conducted language development assessments, hearing screenings, and language trainings to Spanish-speaking staff at orphanages under supervision of Dr. Ken Bleile.
- Supervised undergraduate students in Communicative Disorders conducting language assessments, hearing screenings, and language trainings.

May 2010

Service Learning Project, Orphanages in Ecuador, via Utah State University's COMDDE Assistive Technology Class, Cuenca and Quito, Ecuador

- Trained English-speaking volunteers from Orphanages Support Services Organization (OSSO) volunteers on language development and language facilitation techniques.
- Trained Spanish-speaking OSSO staff on language facilitation techniques and feeding and swallowing issues.
- Provided and supervised four undergraduate students in Communicative Disorders delivering speech-language services.

Sept 2007 – Present

Founding Board Member for Yellow House Children's Clinic, Mombasa, Kenya

- Yellow House is a community based multi-disciplinary child development service organization that provides education, therapeutic services and outreach to children with disabilities, and their careers, with the fundamental belief that

communication is a basic human right that should be accessible and achievable by all.

- Make collaborative decisions for current projects, fundraising, and recruiting volunteers.

February 2002-2005 **Secretary of ISHA Multicultural Committee**

- Worked with several speech-language pathology professionals from different settings to address issues of multiculturalism in the field.
- Designed a track for state convention and invited guest speakers to present at convention.

PROFESSIONAL MEMBERSHIP

American Speech-Language-Hearing Association (ASHA) *member since 1999*

- **ASHA SIG 14**, Communicative Disorders and Sciences in Culturally and Linguistically Diverse Populations
  member since 2011
- **ASHA SIG 17,** Global Issues in Communication Sciences and Related Disorders *member since 2011*

Illinois Speech-Language Association (ISHA) member *1999-2009*

CERTIFICATION AND LICENSURE

- **American Speech-Language-Hearing Association (ASHA):** Certificate of Clinical Competence, Speech-Language Pathology
- **Illinois Teaching Certificate**: Type 03/09, Speech-Language Impaired
- **Illinois Department of Professional Regulations:** Speech-Language Pathology
- **Utah Department of Professional Regulations:** Speech-Language Pathology
- **Illinois Early Intervention Credentialed:** Speech-Language Therapist for birth to three year olds